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# AMERICAN ARTISAN and Hardware Record

Vol. 87. No. 16. 620 SOUTH MICHIGAN AVENUE, CHICAGO, APRIL 19, 1924. \$2.00 Per Year

*The Weir Book of Facts*  
*Warm Air Heating*

WRITE for  
a copy of  
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book. It con-  
tains much use-  
ful information  
on Warm Air  
heating--includ-  
ing the Stand-  
ard Code in  
large easy-to-  
read type.



*The Weir*  
GAS AND SOOT  
CONSUMING  
*Steel Furnace*  
*The MEYER FURNACE CO.*  
Peoria, Illinois

# 236,000

A city of 236,000 homes—over a million inhabitants!—is represented by that figure.

Every one of those homes is given healthful climate by dependable heat from Mueller Furnaces.

That's a powerful sales aid to Mueller Dealers.

236,000 satisfied users have paid cash to have dependable heat in their homes! That fact will strongly influence prospective furnace buyers.

Yet this is only one of the many things that make Mueller Furnaces profitable to Mueller Dealers. A penny post card asking how *you* can make more profits with Mueller Furnaces will be a good investment.



**Mueller Double  
Radiator Furnace**  
Largest direct heating  
surface of any  
furnace.

*Suitable for All Kinds  
of Fuel*

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**L. J. MUELLER FURNACE COMPANY**

193 Reed Street, Milwaukee, Wisconsin

Makers of Warm Air, Steam, Vapor and Hot Water Heating Systems, Garage Heaters, Etc.

*easier to sell than to sell against*

Founded 1880 by Daniel Stern

Thoroughly Covers  
the  
Warm Air Furnace  
Sheet Metal, Stove  
and  
Hardware Interests

# AMERICAN ARTISAN and Hardware Record

Address all communications  
and remittances to  
AMERICAN ARTISAN  
AND  
HARDWARE RECORD  
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### WHY? LET US TELL YOU!

Ask questions when in doubt. The more you ask about your business the more you will know—and the more you know, the more money you will make.

Whether you are a dealer, a salesman, a sheet metal man, an installer, or a hardware dealer, your questions will be gladly and promptly answered.

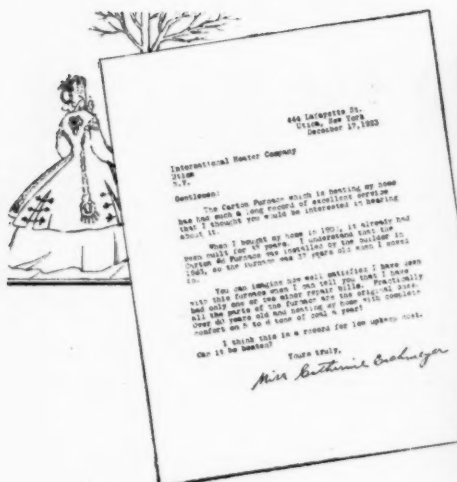
You may wish to know how to repair furnaces, take an inventory or increase the efficiency of your sheet metal shop.

Matters of law, business policy or organization may bother you. Get suggestions from AMERICAN ARTISAN concerning them.

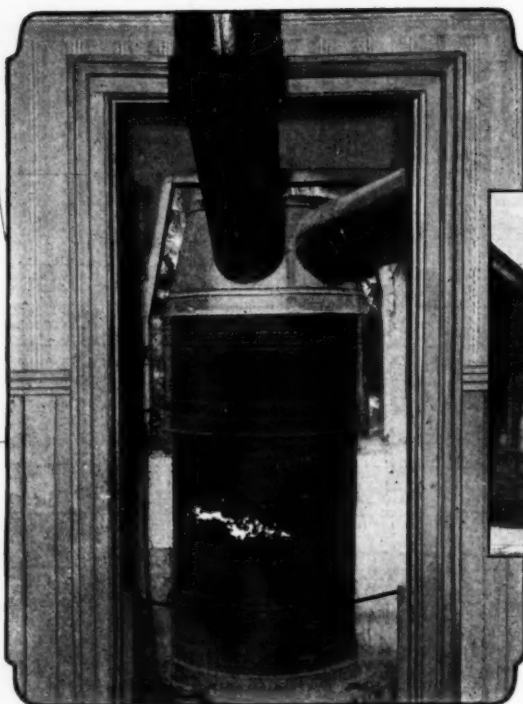
Answers to all questions will be held strictly confidential if so desired by the sender. If no mention is made to the contrary, questions and answers will be published in the various departments of AMERICAN ARTISAN.

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 58-60-62.





## INTERNATIONAL Carton Furnace



**60 years old**  
— and still heating with  
complete satisfaction!



**I**N the basement of this old house stands an **INTERNATIONAL HEATER** with a most interesting record.

Installed in 1863—it is still heating its owner's home comfortably on about six tons of fuel a year.

This heater—an **International Carton Furnace**, offers striking evidence of the durability that is characteristic of **INTERNATIONAL Heaters**. Thirty-five and forty year records are frequent occurrences.

When you realize the service **INTERNATIONAL CARTON FURNACES** give, a few dollars in first cost becomes insignificant.

Get this thought across to your customers. Talk Carton Furnaces and first class installations—then you can say goodbye to the bugaboo of price competition.

## Why Are **CARTONS** So Durable?

It was the ideal of John Carton, the originator, who built the first **INTERNATIONAL HEATER**, to build a heater of unusual durability and efficiency.

The **INTERNATIONAL HEATER COMPANY** has not only striven to maintain that ideal but to produce a better product.

The iron that goes into the Carton Furnace is the best obtainable. The life of the Carton proves that.

Its design is also responsible. The **patented grate**, the shape of the **firepot**, the flare of the **combustion chamber**, the **self-cleaning radiator** and **sealed cup joints** all contribute to the long life and low upkeep of **INTERNATIONAL CARTON FURNACES**.

**INTERNATIONAL HEATER COMPANY**  
UTICA, N. Y.

NEW YORK

CHICAGO

CLEVELAND

NASHUA, N. H.



# Buyers of Warm Air Furnaces Will Be Told Full Truth About Them



**T**HE Eleventh Annual Convention of the National Warm Air Heating and Ventilating Association, which was held in Cleveland, Ohio, April 16th and 17th, will be remembered long by those who attended and by the thousands of those who did not attend—among the installers and manufacturers of warm air furnaces—as the convention at which a real start was made to place the warm air furnace where it belongs—as the most satisfactory, economically and otherwise, means of heating the type of residences that are most common.

The actual organization of the Educational Research Bureau, which is in the hands of a committee of broad-minded and practical men, was decided upon and a sum of money was appropriated for initial expenditures during 1924.

Mr. Glore and his committee have a big job before them, but knowing them, as the writer does, we feel positive in stating that when their report is presented at the 1925 convention, the Association will back them up with all the money which will be required to carry out an aggressive educational campaign, directed to those who have to decide the question of heating apparatus in residences.

By that time, also, the Educational Research Residence will have been completed and paid for; many tests will have been made; practical research data and other valuable information will have been collected and put in shape for reading by the general public and others, more specifically to be interested.

So it may well be said that this Convention and the year just past marks a very important epoch in the history of warm air heating.

We are glad to give credit to all who have helped to bring this about. Naturally, the officers and the members of the various com-

mittees are entitled to the lion's share of such credit, but the manner in which their work has been backed up by the membership is highly commendable.

It is to be regretted, however, that the meetings of the National Warm Air Heating and Ventilating Associations—well attended as they are—have so far failed to attract many of those who should be there. It is difficult to understand how a man who manufactures warm air furnace equipment can convince himself that he has not time to attend or that he does not need the information and inspiration which can be obtained only by being present. By so doing he not only learns much himself, but lends added moral support to his colleagues with his presence.

When one considers the fact that some of the member firms had as many as seven present and many of them two or three, and this other fact, that these firms are among the leaders of the industry, it does seem as if those who did not attend are allowing themselves to lose one of the greatest—and least costly—means of learning from “the other fellow.”

In point of numbers, this Convention was the best so far, except the Urbana meeting in December, 1923. We feel it incumbent upon ourselves to urge that furnace manufacturers and makers of furnace appliances who have not yet formed the habit of attending will get into line and thus derive the full benefit of their membership, and also that those who are not now members will become affiliated with this progressive Association and by doing so help to pay the expenses of the excellent work from which they are now drawing very tangible benefits without sharing in the cost. So get behind this work and push.

## *Random Notes and Sketches.*

*By Sidney Arnold*

A. H. Schiewe, who sells "United Alloy" products, was swapping stories with a bunch of other "knights of the grip" in the hotel lobby one evening. The talk drifted to banks and expense checks that had to be cashed in strange towns, when Wilson, the "Wise" furnace man, sprung this one:

Two farmers were gossiping when one of them volunteered this information:

"Guess Si Slater's bank is in pretty bad condition—'bout to fail."

"How so?" enquired the other.

"Wal," said the first farmer, "I seen a check Frank Bovee wrote for \$2.00. It was returned, marked 'No funds.' Now a bank that ain't able to cash a check for \$2.00 must be pretty nigh busted."

\* \* \*

There is a story current that when Bill Laffin first entered upon a business career he entered the office of a city business man who was very keen on having proficient clerks in his employ. Before a clerk could enter his office he was required to pass a written examination on his knowledge of business.

At the examination, which was to determine whether Bill was employed or not, one of the questions was: "Who formed the first company?"

Bill, always a bright youth, was a little puzzled at this, but was not to be floored. He wrote:

"Noah successfully floated a company, while the rest of the world was in liquidation."

Bill passed.

\* \* \*

Charlie Spindler, of the Handy furnace pipe outfit, was called as a witness in a law suit resulting from a train collision. Among the other witnesses was Pat, an old one-legged pensioner of the railroad. The attorney for the defendant road, in a suave and soothing manner, asked Pat to tell the jury just what he saw

and what were his impressions of the accident.

With some embarrassment, but with a supreme effort to convey the straight of the story, Pat related: "Well, you see, it was like this—I looks up the track and here comes Number Six tohellatohoot! I looks down the track and here comes Three. tohellatohoot on the same track, and I just says, says I, 'That's a hell of a way to railroad.'"

\* \* \*

John M. Lorenz, of the Chicago Furnace Supply Company, has no use for half-way measures. In that respect he reminds me of the colored lady who had just buried her husband:

Mandy was sorting out several suits of black underclothes. Her friend asked in great astonishment:

"Mandy, whah fo' yoh done got dem black underhga'ments?"

"'Cause when Ah mourns, AH MOURNS!"

\* \* \*

Ed McCarthy, who has the "say-so" in the Phillips & Buttorff stove and furnace business in Nashville, Tennessee, was not born in Ireland, but he has a lot of Irish stories that people like to hear him tell. This one is a fair sample:

Pat had heard brilliant tales of wealth and prosperity in America. A friend had even told him that money was so plentiful here that it could be picked up in the street.

In due time Pat decided to come to America, and upon his arrival in port, started walking up a busy street. Fortunately, he picked up a silver dollar before he had gone very far, and in the same block he picked up two more—evidently following very close on the heels of the loser, though he was unaware of it.

At the next corner Pat spied a blind beggar, with his hat in his outstretched hand. Pat hesitated a moment and then threw the three dollars in the blind man's hat, and

passed on with a light heart and with the remark: "Here y'are. Take 'em and welcome. I can see to pick 'em up; you can't."

\* \* \*

Pop Ross, of the Henry Furnace folks, told the following story while at the Lansing convention:

An Irishman who was signing articles on board a ship began to write his name with his right hand, then, changing the pen to his left hand, finished it.

"So you can write with either hand, Pat," said the officer.

"Yis, sor," replied Pat. "When I was a boy me father (rist his soul) always said to me: 'Pat, learn to cut yer finger nails wid yer left hand, for some day you might lose your right.'"

\* \* \*

"Theory and practice do not always agree," remarked Bob Whitmer, of the American Foundry & Furnace Company, "as for example in the story about Harold and his teacher:

"Now, Harold," said the teacher, "if there were eleven sheep in a field and six jumped the fence, how many would there be left?"

"None," replied Harold.

"Why, there would," said she.

"No, ma'am, there wouldn't," persisted the boy. "You may know arithmetic, but you don't know sheep."

\* \* \*

Here is a bit of verse that will appeal to "Jim" Triggs, the Majestic Duplex Register man:

**Down Where the Vest Begins.**

As a man grows older  
And his muscles soften,  
There's a spot he thinks of—  
Every day more often—  
Down where the vest begins!

As his lot grows easy  
And his burdens lighten,  
Theres a place down yonder  
Where the buttons tighten—  
Down where the vest begins!

As there's less of fighting,  
And more of feeding,  
Comes a sign of fortune  
That he can't help heeding—  
Down where the vest begins!

For 'tis there Success  
Pins her approbation—  
On that prosperous,  
Growing "corporation"—  
Down where the vest begins!

# Warm Air Furnace Manufacturers Decide to Establish Educational Research Bureau.

*Its Province Will Be to Disseminate Reliable Information About Furnaces to the Public and Others More Actively Interested.*

WITH the Educational Research Residence at the University of Illinois now well under way, the Warm Air Heating Industry has received another boost on the way to progress. Such was the unanimous opinion of approximately 125 members of the National Warm Air Heating and Ventilating Association who attended the eleventh annual convention of the association held in the Hotel Winton, Cleveland, Ohio, April 16 and 17.

The records of the 1924 convention will go down in the annals of the Warm Air Heating Industry as one of the most important ever held for the advancement of the work toward better heating.

The initial session of the convention started promptly at 10:30 a. m. Wednesday, when the call to order, roll call and communications were executed.

The committees were appointed as follows:

Memorial, W. E. Henry, E. C. Fox and Allen W. Williams; auditing, R. C. Walker, A. G. Hood and H. E. Schwab; nominating, W. G. Wise, George Harms, F. W. Phelps and E. F. Glore.

The architectural committee was also appointed.

The Sergeants-at-Arms were E. Stollenmeyer, E. S. Moncrief, W. D. Cover and E. F. Fox.

At this juncture in the session President E. B. Langenberg made his annual address, consisting in a review of the work accomplished during the foregoing year and the recommendations.

## Address of President Langenberg.

We are eleven years old today and, to my mind, this Association has shown the most active, constructive and progressive growth of any organization of which I am informed.

The possible industrial development and the growing opportunity for service which is just ahead of us far surpasses anything that has gone before.

*Semi-Annual Meeting*—The semi-annual meeting in Urbana, December 4th, proved successful.

At this meeting it was determined to erect an Educational Research Residence to supplement the work already done in the laboratory.

The effect of the action taken on this question has been more far-

laboratory. If it is possible that there be a single member of this organization who is not making use of the data being submitted, and applying it to his product where possible, or using it in his sales discussions, then that man is missing opportunity's persistent knock and is closing the door to his own development.

We are indebted to the University of Illinois for the whole-hearted coöperation they have given our work, and the devotion of Professors A. C. Willard, V. S. Day and A. P. Kratz to our problems is worthy of our highest commendation.

The Educational Research Residence already is attracting national attention. Besides being an asset to our scientific research, it is also becoming the means of attracting new members to our association, of engaging the interest of other organizations, of providing a common ground upon which our membership can come in closer contact with our coöperative effort and with each other. An estate the value of which is in proportion to the individual participation.

The money has been and will continue to be invested in the most advantageous way. Safeguards have been created which will insure against and make impossible any potential loss.

*Committees*—The responsibility of the individual to work on committees is being met more promptly and cheerfully than ever in the past. To sacrifice time and money to the Association's business is not in our development a loss to the individual. Our members realize this and their response to calls for performance and counsel is loyal and sincere. If the critical velocity of your censorious conclusions ever reaches the stuttering point, have yourself put on the Code, Advisory or Publicity



E. B. Langenberg,  
Re-elected President National Warm  
Air Heating and Ventilating  
Association.

reaching than anticipated and has aroused an interest in our work by other organizations that we could never have aroused by other methods.

The attendance was 144, many of our members being accompanied by their chief engineers and designers.

I believe it goes without saying that the membership is in full accord with the idea of holding a regular semi-annual meeting at Urbana each year in the future.

*Research*—Bulletin 141, which is being issued today, is the culmination of six years of effort in our



committee and the cause will be removed.

The recommendations of these committees will be presented at the proper time for your consideration.

*Oil*—The introduction of a new industry into the field of commerce, substituting oil for coal as a heating



Allen W. Williams,  
Re-elected Secretary National Warm  
Air Heating and Ventilating  
Association.

medium, is one in which we are all directly interested. They, on their part, are going through a formative and development period of which the future alone will show either progress or oblivion.

It was my pleasure recently to address the American Association of Oil Burner Manufacturers at their first annual meeting in St. Louis on the subject of "Checking Up the Warm Air Heating System." They were intensely interested in our research work, but as far as I know at present they have made no attempt to establish a committee or laboratory for research in their field.

After hearing their discussions, I am of the opinion that, while at present they are really making progress in an individual way, that they are still traveling in the dark. The public is, as usual, paying for the experience and the experiments, but as the public is also demanding basements free of ashes and coal dust and a system that will run itself, they are willing to pay.

Our industry cannot at the present time obligate itself to oil burning until this new business has proved its justification on fact and not sales arguments.

It has been said that oil burners will not prove satisfactory in a warm air heater. I take issue with this statement, as there are a great many already in use that are proving meritorious.

The field for the sale of oil burners for use in warm air heaters is far in excess of any other heating system and the oil burner manufacturers would do well to make an analysis of the problems that are peculiar to this high class of heating.

*Bulletin*—As the medium for a monthly contact with our membership we have issued this year four monthly bulletins. Each issue has consisted of current events, research activities, progress of our Research residence, business summaries and a short article by one of our members.

Judging from the demands for additional copies, it is meeting your approval. There is, however, a feature that would make it of untold benefit to yourself and the association, and that is, that you distribute a copy each month to your entire force of salesmen and they in turn using it to inform the trade they call on of our work. Why not cash in on this idea? A word of instruction from you to your men would make a start in publicity that could not be realized in any other way.

As it costs but very little to print, I would suggest that a charge of ten cents be made for each extra copy ordered. In this way the Bulletin could be paid for without touching any of our present resources.

It is planned to mail the Bulletin to all the trade papers, the American Institute of Architects, the American Society of Heating and Ventilating Engineers' *Journal* and to each of the twenty-two state associations of sheet metal contractors, and their national organization. In other words, it is to have the widest possible distribution.

This fits in very appropriately

with any general plan of publicity we may undertake.

*Publicity*—I shall not dwell on this at length just now. Our committee has a plan for you to consider that I believe will meet with your approval.

It goes without saying, however, that we are developing some real news matter, and as our research progresses we will have to find a means of disseminating this information to the public and realize on an investment, or we have expended for naught.

Our program is a long one. There are many problems to discuss, conclusions to be arrived at, and I sincerely believe that open discussion is more conducive to coöperative progress than lengthy dissertations of individual opinions, even by your president. With this in mind, I want to say in closing that we have and we are a smooth running ma-



Professor A. C. Willard,  
University of Illinois.

chine, intelligently lubricated, consistently steered, entergetically powered, that brooks no scandal, accepts just criticism and indulges not in acrimonious debate, but with a sincerity of purpose—is forging ahead with a definite purpose to reach the light that beacons ahead.

The reports of the officers were then made, Treasurer W. P. Cooke being the first to report. This report was followed by that of the auditing committee, which found the books and accounts in good condition.

Secretary Allen W. Williams then made his report, which was as follows:

**Report of Secretary Allen W. Williams.**

*Statistics*—Owing to federal court decisions and the expressions of the

In the absence of answers to this question, it is only possible to say that there is no question but what the increase has been a healthy one.

Numerous trade associations are petitioning Congress that the law be changed so that statistics may be gathered and also urging governmental departments to either urge this action or in some way secure a modification of the present ruling.

In previous annual reports I have taken the liberty of suggesting statistics to be of any value must be

amount collected to date, \$98,292.13.

Again, without any wish of urging you to use our Collection Bureau beyond your own inclination, your attention is respectfully called to this service and a saving in expense of collection that is frequently possible when the Association is permitted to handle your slow accounts and bills receivable.

*Costs*—As it may be of future interest, the following is offered in this report and, of course, only in a general way covers our fiscal year



Exterior View of Educational Research House Now Being Erected at the University of Illinois, Urbana, Illinois

United States Attorney General against the collection of statistics by associations, simple as ours have been, and notwithstanding no illegal use was possible, your executive officers, wishing to be entirely within the law, have directed that none whatever be collected covering the year 1923.

For your reference it is stated that for several years our statistics have been confined to the one question: "What was your percentage of increase or decrease in the total number of furnaces, pipe, pipeless and room heaters, you sold during 1923, as compared with the previous year."

fairly complete and correct, and that my experience, perhaps limited, indicates in most industries the only way to have them so was through their collection by government authorities.

*New Memberships*—Nine desirable companies have been added during the past year. Seven members were lost as follows: One, through consolidation; two retired from the industry; one failed, and three resigned.

*Collection Bureau*—Number of accounts to date, 1,216; amount of same, \$183,062.12; amount collected during the year, \$16,344.63;

from April 1st, 1923, to April 1st, 1924.

Costs remained on practically the same level, with some increase noted from April 1st to fall. There was a reduction in the market price of pig iron and coke, but labor was not reduced. On November 19th, 1923, the iron market started to advance and it has shown an upward tendency since that time until the last ninety days when declines in sheets and pig iron have occurred.

The price of skilled labor naturally increased January 1st, in line with the advance granted union molders.



**March Activity**—The several reports of Professor Willard and his capable assistants, Professors Kratz and Day, have shown the marked and practical work accomplished at the University of Illinois during the year.

As viewed from your Secretary's office, making a reality of the desire and interest for an educational research residence cannot be overestimated. Our research staff and architect cannot be commended too highly for the time and care they have given to the success of our research residence.

As usual, during the year I have visited the University and met there with the advisory committee.

**Standard Code and Other Publications**—The demand for this code, both in quantity and single copies, indicates that its value is recognized and how well it is known. The requests for copies have frequently exhausted my supply. During the past year several other publications of papers and reprints have been distributed and the demand has generally exceeded the supply. This will be avoided in the future.

**Review and Prospects**—Despite the high cost of labor and building materials, residence building continued in large volume during the last six months of 1923 and good authorities prophesy a continuance during 1924. If any slowing down was noticed, it was probably in May of last year. Replacements should make up in a large measure for any falling this year.

**The Monthly Bulletin**—Through the efforts of President Langenberg, our monthly letter has grown into a printed folder that has been well received. Its contents naturally shortened the annual report of your Secretary, as it covers monthly what might otherwise be written into such report.

**Simplification**—The register manufacturers of our industry have made some progress in simplification. The pipe and fitting manufacturers' product is automatically governed to a large extent by any change in size and styles that is made in registers.

The heater itself will receive consideration in due time.

The Chamber of Commerce of the United States in a special bulletin says: "The carrying on of intraplant simplification and standardization in no way precludes or hampers the coöperative movement within an entire industry. In fact, it facilitates the broader project. The individual program may, in many instances, be the proper initial procedure in that the potentialities of the work have been appreciated and the increased effectiveness of operation demonstrated.

**Oil Burners**—During the year inquiries that have come to my office have indicated more than a growing interest in such appliances. Im-



George Harms, Member of Educational Research Committee.

provements are constantly being made in the burners and it would seem that some of them at least are close to the practical stage if they have not already reached it.

I am not familiar with different oils that may be used as fuel, but men in the oil business have sometimes suggested the use of what they call furnace oil rather than fuel oil, stating that there is a regular supply of the former available, while the production and quality of the latter is uncertain.

**List of Trade Names**—Following instructions given in our last annual convention, I revised and printed in the back of the proceedings of that convention our Association list of trade names. It would assist ma-

terially to perfect our list if the members would check the same over and let me have additions and corrections.

**Coöperation with Other Associations**—During the year I attended the annual convention of Sheet Metal Contractors in St. Louis, and the annual meeting of the Ohio Sheet Metal Contractors in Cincinnati, Ohio, and the Western Warm Air Furnace & Supply Association in Chicago, and several others.

**The Trade Press**—Again it is a pleasure and obligation to remind you of the publicity and support which the various publications representing our industry have given our Association and to the whole industry, and at this time to thank them.

President Langenberg, as you know, has been equal to every occasion and has given generously of his time and ability in directing and pushing the activities of our organization.

Our members, one and all, have willingly served on committees and assisted whenever called upon to advance the best interests of our Association and those of the industry as a whole as well.

I. L. Jones, chairman of the executive committee, followed Secretary Williams with the executive committee report, which is as follows:

#### Report of Executive Committee.

Your Executive committee begs to report as follows:

1st. We have held several meetings during the past year and have carefully supervised the affairs of the Association.

2nd. We recommend that our present contract with the University of Illinois in reference to Research Work be reaffirmed for our new fiscal year.

3rd. We recommend the following budget for April 1, 1924, to April 1, 1925:

For General Expense, \$2.50 per unit.

For Research Work, \$2.50 per unit.

By "Unit" is meant the maximum membership class. Other classes are figured on a percentage basis.



For Educational Research Bureau, \$1.00 per unit.

Total, \$6.00 per unit.

One-half of each of the above amounts to be called at once; one-half on November 1, 1924.

4th. We recommend that the printed monthly bulletin be continued and that a charge of ten cents per copy be made for quantity orders.

5th. That a mid-year meeting be held in December, 1924, at Urbana, Illinois.

6th. That the Annual Convention in April, 1925, be held in Cleveland, Ohio.

7th. We also wish to announce that a distinctive color for our Association stationery has been selected by your committee and will appear in the near future.

The reports of the various committees were heard, the first being that of the Standard Code, which was given by Professor J. D. Hoffman, instead of C. M. Lyman as announced on the program.

Dr. John P. Wagner, chairman of the Educational Publicity and Trade Extension committee, reported for that committee.

E. F. Glore reported for the special committee on trade extension, and offered the following resolution, which was adopted by the assembly:

#### **Mr. Glore's Resolution.**

RESOLVED: That a committee of five be appointed by the chair to organize the Educational Research Bureau, for the purpose of giving publicity to the work of the Educational Research Laboratory at Urbana, Illinois;

That this committee be empowered to expend not more than \$2,500 between now and the next annual meeting of the Association;

That the monthly bulletin be authorized for circulation among our salesmen at a price of ten cents per copy.

A brief report was made by R. C. Cook on the simplification of furnaces, and this was followed by a general discussion of Legislation and Code.

In this connection A. P. Lam-

neck spoke on the need for legislation to regulate the installation of furnaces, preferably by city or municipal governments. E. B. Langenberg and Harry Hussie expressed agreement with Mr. Lamneck.

L. W. Hammond suggested that Professor Willard and his staff are the proper persons to work out a schedule of furnace ratings.

D. Rait Richardson regretted that furnace manufacturers are devoting too much time to making furnaces that will sell profitably at the cheapest prices, with little or no regard to quality and service.

E. F. Glore suggested that Educational Research Bureau would be able to assist in getting local sentiment worked up for installation code legislation.

The report on Register Standardization was read by R. W. Menk as follows:

#### **Report of Register Standardization Committee.**

I am pleased to report that the register standardization program has been working out splendidly; in fact, if it had gone on any easier it would have been disappointing. Two meetings were held—one in Chicago, which was well attended by representatives from the various associations and representatives of register and fitting manufacturers. The work done at this meeting was the forerunner for the meeting held in New York. The meetings in New York consisted of one by the register manufacturers and a joint meeting of manufacturers and committees representing the associations. These meetings are lively and interesting and just enough resistance to bring out the best.

The allied meeting closed with a feeling that wonderful progress has been made and as the representatives present constituted over 85 per cent of the manufacturers of registers and fittings, there seems to be little doubt but that the program will continue, and after sufficient time has been given for manufacturers and jobbers to clear their stocks of pre-standard sizes it has been suggested that another meeting be called to get behind this pro-

gram, more of which may be looked for from the committee in the near future.

Mr. Hudson, Chief of Division of Simplification, Washington, D. C., has been very enthusiastic over the progress made; in fact, I do not believe that there has been another product that has been so quickly adjusted, and manufacturers of registers and fittings deserve much credit from the furnace industry for it.

Before the meeting adjourned for lunch, Clarence M. Lyman made the report for Advisory committee on research work as follows:

#### **Report of Advisory Committee.**

Your Advisory committee respectfully submits the following report:

At the meeting of this association in Urbana, December 3, 1923, you authorized the purchase of a site and the preparation of plans for the proposed Educational Research Residence.

Your committee was charged with the duty of supervising and approving the plans, and when approval by them of recommending to the Executive committee and officers of this association, the authorization of a contract by the trustees.

Immediately following the December meeting and the purchase of the site, Architects L. H. Purine and C. A. Kissenger were employed to design a suitable building, under the direction of our trustee, Professor A. C. Willard, and Professors Day and Kratz.

Tentative blue prints were sent to all members of the Advisory committee for criticism and suggestions, and on March 25, 1924, a meeting of the committee, with the architects and Professors Willard, Day and Kratz, was held at Urbana, at which time the bids for the building were considered.

At this meeting, after a full discussion of all the details not previously decided upon, your committee telegraphed each officer and member of the Executive committee, recommending the acceptance of the lowest responsible bid and the immediate entering into a contract on

the part of your trustees for the erection of the home.

This bid with the changes suggested is practically \$17,000; to be exact, just \$16,999.40.

Your committee hastens to add, however, that there will be some undetermined extras that will increase its cost beyond the 60 cents now remaining at our disposal under the \$17,000 authorization of your Executive committee.

In justice to Professor Willard and his associates, as well as to the architects, it should be stated that many changes in the details of the house have been suggested and strenuously advocated, but it is the unanimous opinion of your committee that the essential elements necessary for our research work have been covered fully, and that here we can check the results already obtained in the university laboratory in a complete and satisfactory manner.

And at the same time we will have a building of such character and design that it will appeal to architects and owners who are seeking the better class of residence work.

Your committee is glad to add that work has already been commenced.

The excavation has been completed. Forms are in process of construction and footings are being poured today.

The work done since our meeting of one year ago at the university will be presented by Professors Willard, Day and Kratz, and need not be commented in further detail by your committee except to congratulate the society upon the results so far accomplished, which has already placed our industry upon a much higher plane than it has ever held before.

"Education and Its Relation to Better Heating" was the subject of the address by A. M. Daniels, Washington, D. C. Excerpts of this address will be found on another page.

Professors Willard, Kratz and Day reported on the actual work, using bulletin No. 141, which is just off the press, to quote from and

illustrating their remarks with lantern slides showing the charts, tables, etc., in the bulletin.

Certain sections of this bulletin, of special interest to installers, will be published in AMERICAN ARTISAN. Copies of Bulletin No. 141 can be obtained by writing to the Engineering Research Station, University of Illinois, Urbana, Illinois.

Professor Willard began his talk by giving a statement of finances of the research work as shown by the tables hereinafter.

**Financial Statement Educational Research Residence Fund as of April 15, 1924.**

**Expenditures.**

1. Purchase of lot.....	\$2,500.00
2. Paving and lighting assessment .....	54.69
3. Survey of lot.....	15.00
4. C. A. Kissinger, architect and delineator...	379.95
5. Blueprinting and photography .....	4.80
Total .....	\$2,954.44

**Encumbrances.**

By contract for construction (with alternates and adjustments).....	\$16,992.15
By architect's agreement (based on 4 per cent of contract price) .....	319.68
Paving and lighting assessments .....	272.16
Blue prints and photography .....	23.60
Total .....	\$17,607.59

Total expenditure and encumbrance, \$20,562.03.

Note: Nothing is included for insurance or taxes, as these items are not yet determined.

**Financial Statement Warm Air Furnace Research Fund.**

For the period, April 1, 1923, to April 1, 1924.

**By the Association:**

Salaries .....	\$4,466.65
Materials and labor.....	813.89
Total .....	\$5,280.54

Total expenditure by Association for 5½ years, since October 1, 1918. \$29,466.15

By the University on behalf of the National Warm Air Heating and Ventilating Association:

Salaries ..... \$3,175.00

(No charge is made for supervision by A. C. Willard, stenographic service, rental, light, water, power, nor for publication of Bulletin 141.)

Instruments and materials 250.00

Total ..... \$3,425.00

Total by the University for 5½ years, since October 1, 1918. .... \$18,445.05

Total money cost of Research Work, \$47,911.20.

The personnel of Professor Willard's is made up as follows:

**The Organization of the Furnace Research Staff and the Advisory Committee.**

The agreement between the University and the Association provides for a staff of at least two full-time research associates and one half-time research assistant, who shall be under the direction and supervision of the Engineering Experiment Station. The agreement also provides for an Advisory Committee on Furnace Research, appointed by the President of the Association. This committee meets in conference with the Furnace Research Staff, as occasion may demand, for the consideration of new subjects to be listed in the program of investigation, for a review of the work accomplished, and for a discussion of any matters affecting the scope of the investigation.

**Furnace Research Staff.**

The personnel of the research staff from April 1, 1921, to February 1, 1924, is as follows:

M. S. Ketchum, Dean College of Engineering, and C. R. Richards†, Director Engineering Experiment Station.

A. C. Willard, Professor Heating and Ventilation, and head of Department of Mechanical Engineering.

A. P. Kratz, Research Professor.

† Resigned. August 31, 1922.

V. S. Day, Research Assistant Professor.

J. A. Goff†, Instructor in Mechanical Engineering.

C. Z. Rosecrans‡, Research Assistant in Mechanical Engineering.

#### Advisory Committee on Furnace Research.

The personnel of the Advisory Committee has been changed somewhat since the investigation was started. Since April 1, 1921, the following members of the Association have served on the committee:

P. J. Dougherty, Chairman,\* Heating Engineer, International Heater Company, Utica, New York.

E. B. Langenberg, Secretary and Treasurer, Haynes-Langenberg Manufacturing Company, St. Louis, Missouri.

R. E. Lynd, Manager Buffalo Plant, Richardson and Boynton Company, Buffalo, New York.

R. W. Menk, Manager Furnace Department, Excelsior Steel Furnace Company, Chicago.

E. S. Moncrief, Vice-President, Henry Furnace and Foundry Company, Cleveland, Ohio.

F. W. Phelps, Second Vice-President and Treasurer, Moore Brothers, Joliet, Illinois.

F. R. Still, Vice-President, American Blower Company, New York City.

E. F. Glore, General Sales Manager, Abram Cox Stove Company, Philadelphia.

C. M. Lyman, Chairman, Sales Manager, International Heater Company, Utica, New York.

The present organization of the committee is as follows:

C. M. Lyman, Chairman, Utica, New York.

E. F. Glore, Philadelphia.

E. B. Langenberg, St. Louis, Missouri.

R. W. Menk, Chicago.

E. S. Moncrief, Cleveland, Ohio.

F. W. Phelps, Joliet, Illinois.

† Mr. Goff was connected with the work only during vacation period, July 1 to Aug. 15, 1922.

‡ Mr. Rosecrans was connected with the work during the period June 15, 1921, to Aug. 1, 1921.

\*Mr. Dougherty was succeeded October 1, 1923, by Mr. Lyman.

#### The Educational Research Residence.

On December 4, 1923, the National Warm Air Heating and Ventilating Association at its mid-winter meeting in Urbana, Illinois, passed a resolution providing for the creation of a fund not to exceed \$25,000 for the erection and equipment of a test house to be used "in conjunction with the research work now being carried on at the University of Illinois." This house is to be known as the "Educational Research Residence," and the necessary site has already been secured. The front elevation and floor plans are shown in Figures 90 and 91.

Such a house will make it possible to compare and correlate the results of tests of furnaces which are now being made in the laboratory with the results obtained on the same furnaces under actual house conditions. In addition to this, there are many factors affecting the performance of a furnace heating system which cannot be adequately investigated in the laboratory. Such factors are:

1. The effect of wind.
2. The relative value of inside and outside air supply.
3. The significance and proper percentage relative humidity in the house.
4. The variation of air temperatures from floor to ceiling in actual rooms with different air temperatures at the registers.
5. The proper location of furnace with respect to center of basement.
6. The relative value of return air ducts above floor compared with ducts placed below basement floor.
7. The proper location and number of recirculating registers.
8. The proper location of warm air inlet registers.
9. The effect of various installation details on operation of wall stacks to upper floors.
10. The effect of various installation details on operation of basement pipes.
11. The relative value of inside as compared with outside chimneys.
12. The importance of constant temperature both day and night.

13. The problem of the remote room or the room with three sides exposed.

14. The proper installation for a sun porch.

The house will afford a most unusual opportunity to check up many of the requirements of the new Installation Code.

The remainder of the session was taken up with these three professors answering questions and explaining some of the more important features of the Bulletin. Professor Willard gave a general review, while Professors Kratz and Day selected special sections of the Bulletin for their talks.

At 6:30 Wednesday evening the banquet was held at the Hotel Winton.

This banquet and entertainment was unanimously voted a decided success. The menu was fine; the music excellent; and the "surprise" was so well carried out that the whole gathering was in a continued roar of laughter for nearly an hour and a half.

The "surprise" was in the nature of a mock trial, the culprit being no less than the illustrious president of the Association, who was accused of driving the red devils out of his furnace and of corraling the visible supply of B. t. u.'s.

The "actors" appeared to know their parts fairly well, except "Always Willing" Williams who certainly proved himself a good "tinker" as a court reporter. For further particulars about this write to F. W. Phelps.

The cast follows:

#### Cast of Characters.

Judge: Bee Good Watson.

Clerk of Court: Apple Pie Lamneck.

Persecuting Attorney: Fullo-Wind Phelps.

Counsel for Defense: Atera Feed Glore.

Witnesses for Persecution:

Handy Back Fire Harms.

H. E. Schwab Still.

Soloman Aristotle Willard (Expert).

Chicken Hussie.

Witnesses for Defense:



Tea Pot Dome Cover.  
Open Face Blanchard (Deaf).  
Eighty Percent Hoffmann.  
Defendant: He Bee Langenberg  
et Al.

Stenographer: Always - Willing  
Williams.

Jury Members:

Two Pipe Menk, Foreman.  
Wise Bill.

Sheet Metal Scott.

Red Eye Dick (Moncrief).

Tom Mix Richardson.

Mah Jongg Glessner.

Rufus Augustine Gulick.

Four Eye (Tom) Pearson.

Artless Goody Pedersen.

Surplus (R. C.) Cook.

Velox Scipio Day.

Great Lakes (Detroit) Smith.

The session Thursday morning was opened by an address from William P. Werner, Peoria Paint Company, Philadelphia, who spoke on "Furnace Cement and Its Application to Warm Air Heaters." This address is published on another page of this issue.

"The Use of Ozone in Residence Heating" was taken up at this time also.

All the old officers were re-elected except Vice-President Edward Norris, who declined to stand again because of his other heavy duties. His place was taken by Richard C. Cook, Thatcher Furnace Company, Newark, New Jersey.

The officers as they now stand are:

President—E. B. Langenberg, St. Louis, Missouri.

Vice-President—Richard C. Cook, Newark, New Jersey.

Secretary—Allen W. Williams, Columbus, Ohio.

Treasurer—W. P. Cooke, Monroe, Michigan.

The Advisory Board for the Research Work made the suggestion, which was approved, that no assessment be made for the furnishing of the Educational Research Residence, but that voluntary contributions in cash will be accepted. The money thus secured will be used by the Board to buy furniture, rugs, etc., and any contributor will have the privilege of having a metal plate

attached to the various pieces stating that it was contributed by him.

A number of such contributions have already been made.

The Executive Committee was made up as follows:

Irving L. Jones, Utica, New York, Chairman; D. Rait Richardson, New York City; J. V. Patten, Sycamore, Illinois; H. Burinson, Hamilton, Ontario; W. H. Hill, Elyria, Ohio, and John Frey, Detroit.

President Langenberg announced the following standing committees:

Educational Research Bureau—E. F. Glore, Philadelphia; George Harms and Roy C. Walker, Peoria, and Mr. Bridge, St. Louis.

Legislative—A. P. Lamneck, Columbus, Ohio; H. E. Schwab, Milwaukee, and F. G. Sedgwick, Minneapolis.

Architectural Advisory—T. A. Barry, Hamilton, Ohio; H. T. Richardson, New York City, and R. W. Blanchard, Chicago.

Metal Standards—W. D. Cover, Crestline, Ohio; Charles Seelbach, Cleveland, Ohio, and J. M. Triggs, Huntington, Indiana.

Thus came to an end the best annual convention of this progressive organization. Its work will bring direct benefit to every man in the furnace business.

The report of the Executive Committee was adopted with the following addition: "That the National Association of Sheet Metal Contractors and all the state associations in this trade be invited to elect one or more delegates each to attend the meetings of the National Warm Air Heating and Ventilating Association."

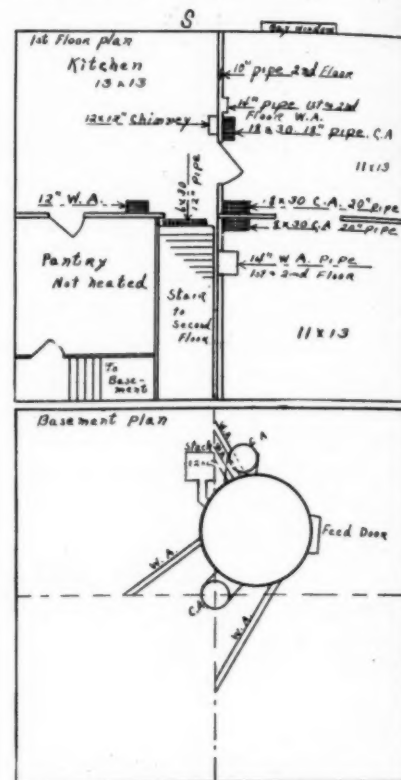
The balance of the report is published in Wednesday's proceedings.

### **G. W. Oakes Submits Plan to Correct Error in G. J. Gagg's Installation.**

In the issue of AMERICAN ARTISAN for April 5th, there appeared upon page 20 an outline of a house in which the heating system was not giving satisfactory results, submitted by G. J. Gagg.

Two plans for correcting the installation were presented the following week in our April 12th issue, page 24, one by P. F. Waite and the other by J. C. Boone.

In this issue we have another plan almost similar to the other two,



**How George W. Oakes Would Correct Mr. Gagg's Installation.**

by George W. Oakes, Britt, Iowa, who writes as follows:

To AMERICAN ARTISAN:

I am mailing you a sketch showing the correct manner in which the heating system of the house of George J. Gagg, New Ulm, Minnesota, should be arranged so as to give satisfactory results.

I firmly believe this plan will produce the satisfactory results desired, even in zero weather, if the registers are of the proper size—these should be figured according to the pipe capacity.

Yours truly,

George W. Oakes.

Britt, Iowa.

Have you made any improvement in the method of lighting your window displays or is the system just what it was when you first went into business? Modern methods mean more light for less cost.

## A. M. Daniels Discourses on Education and Its Relation to Better Heating

*Tells Warm Air Heating Men at Cleveland Convention That Public Receives Greater Knowledge of Artificial Heating Through Press*

"**E**DUCTION and Its Relation to Better Heating" was the subject A. M. Daniels, Washington, D. C., delivered at the convention of the National Warm Air Heating and Ventilating Association, Cleveland, Ohio, April 16 and 17, 1924.

Permit me first to express my sincere appreciation of the invitation extended to me to be with you at this, your eleventh annual convention. Having attended your convention here last year, where it was my pleasure to meet many of your members, listen to reports of your various committees, and to learn at first hand the results of the coöperative research work being conducted by Professors Willard, Kratz and Day at the University of Illinois, I could not forego the opportunity presented last December to attend your first mid-year meeting held at Urbana, and I was well repaid.

If better and more economical heating of our homes is to be obtained, it is the function of such organization as yours to bring it about through a program of education. Just who is to be educated and how it can best be accomplished are questions which may properly bring forth many different answers.

Most, if not all, of you are aware of the fact that never in the history of the world has there been such a desire and demand for enlightenment as exists in our United States today. Never before have our educational systems been taxed as they are today. From the grade schools, through the high schools, colleges and universities, we find an ever growing demand for increased facilities, evidencing a pressing desire on the part of the public to be better and more thoroughly informed. The curricula of our high schools is far in advance of those of a decade ago.

Now what does this condition indicate? To me the demand for education is an indication of a new social point of view. The nation's social conscience has awakened, and with this awakening has come a desire for better things. Witness the "Better Homes in America" movement. It has been organized on a permanent basis as a public service organization. During 1923 more than 2,000,000 people visited the demonstrations held throughout small villages and rural communities.

To bring to our people the benefits of research and investigation the United States Department of Agriculture, through its extension service and in coöperation with the extension facilities of the land grant colleges, disseminates information by means of exhibits, publications, demonstrations, lantern slide exhibits and moving picture reels, county agent coöperation and direct correspondence. The results of such work have been most gratifying, but there is still much to be done. Of late, due largely perhaps to the fuel situation, much interest has been manifested in home heating systems. It was only a few weeks ago that one of the extension workers conferred with me regarding the preparation of a lantern slide series on farm home heating. Correspondence passing over my desk indicates clearly that throughout the country there is a decided interest in securing an answer to the question, "What is the best method of heating my house?" Many letters are received daily seeking advice as to how to remedy systems that do not function properly. These are by no means confined to any one system of heating, but I must frankly say that the warm air plant comes in for its full share of criticism. I am thoroughly of the opinion that a warm air heating sys-

tem properly designed and installed is an ideal means of warming a residence, and in replying to inquirers we try to impress upon those who complain of unsatisfactory warm air plants that their trouble is probably due to improper design and installation rather than to the type of heating system.

You gentlemen appreciate the fact that to permanently advance any cause the cause must have merit. The merit of warm air heating, when properly and efficiently applied, is unquestioned. Your contribution to improved home heating through the research work which you support is indeed commendable. Practical results have been shown and others are either about to become available or are in the making. They should be made known to those interested if the warm air industry is to enjoy the confidence and respect of the public.

Most manufacturers have their own particular methods of advertising their products and they generally see to it that the branch manager, salesman and dealers are supplied with talking points on the product they are selling, but all of the links in this chain are not as strong as they should be. Many who are part of this chain have been satisfied merely to sell heaters, paying little attention to where and how the heaters are ultimately to be used. To strengthen these weak lines they should be taught to talk the economics, benefits and proper design of home heating systems rather than to argue for the use of their particular product. They should be equipped to explain to prospects many phases of the research work that is being carried on and can thereby convince their prospect that it is as important to provide a proper system of supply and return lines as it is to purchase a heater of ample capacity from a firm of recognized reliability. But while these distributing links may often be weak, the last link, the uninformed public is the weakest. It is here that a consistent and systematic campaign of education is most needed. It should be the aim of



such an organization as is represented by this gathering to see to it that the general public is properly informed and that when they purchase a heating plant that they get a system of ample capacity, designed and installed in accordance with your standard code.

In order for any industry as a whole to obtain a pre-eminent position in the public estimation, nothing is more essential than that the industry as a whole shall sell itself to the public upon which the industry really is dependent for its actual existence. The term "public" means not only those who buy the industry's products, but all those who may benefit in any way by a more general appreciation of the service which the industry is endeavoring to render. It is then this weakest link, this public, which must be educated. To this end the coöperative effort and backing of everyone engaged in the industry must be enlisted in presenting to this public the advantages of better heating methods. Individual efforts to push a particular heater or product will not get the message across convincingly.

It is the duty of the advertising departments of large concerns to make the advertising for which it is responsible pay dividends commensurate with the investment. The purchase of advertising space and the returns thereon are governed largely by the field that the medium covers.

Manufacturers of the heating industry in general utilize the trade press to get their message to the dealer. The dealer inserts an advertisement in the local papers to inform any who may have decided to install a heating system or who may wish repairs made to an existing installation that they are located at such and such an address.

Let me ask: How often does a real message about better heating appear in a daily paper? What effort is evident on the part of those in the heating industry to really inform the general public about improved heating? True, some manufacturers are making such an effort

and at least one has endeavored, by means of a broadcasted talk, to inform the general public regarding improved heating. But this is individual effort.

Your trade press is sold on better heating, but has any effort been made to sell the public press on the idea? And by that I mean the getting of the message across to the men who control the newspapers. The daily press, the financial press, the farm press, the agricultural press,

### More Evidence of How It Works!

#### To AMERICAN ARTISAN:

Receiving so many replies regarding the double chimney draft problem, which was shown in the March 17th issue, I hardly know how to thank you enough for the service which you have rendered. I thought probably that I would receive a reply to my letter, but I did not have any idea that I would receive sixteen, from practically every corner in the United States.

After this I feel I have a friend to refer to when I am stuck who will be pleased to help me out.

After I have made up several alterations on the chimney according to the different ideas that were submitted, I will then advise you of the results obtained so that you may publish them for the benefit of not only those who answered my inquiry, but also for other heating men who may be interested in this line of work.

Again thanking you for the service which you have given me, I am

Yours very truly,

GEORGE T. RICHTER.

Philadelphia, Pennsylvania,  
April 16, 1924.

the women's press, the country weekly press and the national magazines are all looking for material of general interest with which to attract readers, but many of the editors or those who control the policies seem to not always know what may interest their readers, and it is often necessary to expend a considerable effort to sell them on some particular idea. There is no reason why the news organs should not be sold on improved methods of heating American houses.

Turn to various papers and periodicals. Of what are they com-

posed? Advertising only? No. News only? No. Scan them closely. What is found? Just that for which the public buys the paper or periodical. News? Yes. Where? In the news columns. Information, advice, analytical consideration of a current question? Yes. Where? In the editorial column. Automobile news, radio news, athletics, sports, etc.? Yes. Where? In the appropriate department or column. Special information, such as market reports, weather reports, stock and financial reports? Yes. Where? In a reserved and regular place. Why not some space devoted to improved home heating?

Why do practically all newspapers carry market reports and stock quotations and similar information? For no other reason than that the managements of the papers realize that such information is useful and of vital interest to its readers. It helps to sell the paper and to increase its circulation and popularity, so that advertisers may see its broadening field and realize its possibilities as a medium for their use.

In a smaller way it is true but none the less striking is the fact that throughout our broad land are millions of home owners today and new ones coming every day who are interested in the general subject of home economics. Has not the industry a message for these nation builders? Where shall they go for an answer to the heating problem?

Throughout a goodly portion of our country homes must be artificially heated more than half of the year. Is there a more important domestic problem than the relation of home heating to health and comfort?

Consider the automobile. It was not long ago when the only publicity given it were indictments as menaces to public safety and how legislatures were considering measures toward discouraging its use on the highways. But how is it now? Pick up a Sunday newspaper or daily for that matter and count the news columns that benefit the automobile industry, or review the space devoted to radio news, not advertis-



ing, unless we call it free advertising, but honest to goodness news that the public wants.

Suppose the managerial staff of the great body of news-spreading media were sold to the possibilities of a regular column, weekly or daily, devoted to the heating problems of the home owner. Suppose there existed an agency of the heating industry whose business it was to provide short appropriate news write-ups for such a column, and suppose the write-ups were so prepared as to be of real helpfulness to the home owner, and suppose that editorial comment appeared from time to time and that there was included a question and answer service, through the paper or papers that carried a column devoted to home heating problems, to which readers might submit their heating problems.

What has been done in the past toward promoting better and more economical heating installations? Have not efforts been expended mainly in selling particular products in a prosaic way to the dealer alone, a narrow avenue of approach to the potential market, a driving in first or second gear instead of in high? The heating industry has an important message to give to every present or future user of a home heating apparatus.

Letters coming to my desk often indicate a woeful lack of appreciation of how heating systems function. It is hard to believe, but some do not know that in a warm air plant the air that passes over and through the fire goes up the chimney and is not distributed throughout the house. They attribute "coal gas" to the fact that heated air from the furnace is used for warming the home. Misunderstanding is apt to prejudice many potential prospects. Consider again the automobile industry. Its program of educational advertising was designed to inform every man, whether prospective customer or not, and to keep before his mind the fact that the automobile was constantly being improved. It made no difference whether the appeal was or was not directed to a

known prospect. The object was to engender desire by supplying knowledge and information about the industry and its product. It preached healthful benefits made possible through the use of the automobile. Has your industry a less attractive appeal?

So the heating industry would do well to initiate a plan designed to inform the general public as to the benefits of better heating and the means of securing it. Individual effort, while helpful, will not attain

the results possible through organized effort. It requires organized effort and a well directed campaign to correct impressions that have been in the public's mind for years and to create an understanding of the new era in home heating. It must be an educational campaign, with no intimation that it has as its object the selling of heating apparatus. It must give the right kind of help and advice to the home owners of our country. It has an immense field to cover.

## *W. P. Werner Warns that Installer Must Be Properly Instructed in Using Furnace Cement.*

*Describes Application of Asbestos Cement to Furnaces and How the Joints Can Be Made Secure.*

THE furnace manufacturer is constantly confronted with inquiries from installers about the proper use of cement in furnaces, and the following article delivered by William P. Werner, of the Pecora Paint Company, Philadelphia, before the members of the National Warm Air Heating and Ventilating Association Convention, Cleveland, Ohio, April 16 and 17, will go a long way to setting many installers right:

The sole object of considering the subject of asbestos furnace cement and its application to warm air furnaces is to bring about a better understanding of the properties of this important material and its proper use.

The maker of both furnace and furnace cement receive complaints and such complaints usually originate from a smoky or gas leaking furnace. This leakage is usually due to a poor joint, and as asbestos furnace cement is used to keep the joints gas tight, the most natural thing to do is to blame the cement, and while this action may be justified in some cases, an investigation may develop the fact, the furnace or furnaces have been poorly mounted, or perhaps—the flue is not of the proper size.

If we consider the joints of the furnace as the weakest part of our

construction, the strength of such joints are only as strong as the cement used, and every consideration must be given to the proper making of a joint. Without a good joint the furnace is condemned, and it appears to be a necessity to start an educational campaign among installers of furnaces, whereby they will be properly instructed how to make a joint with asbestos furnace cement which will be gas tight.

### **Asbestos Furnace Cement, Etc.**

With the early manufacture of stoves and furnaces came a demand for a putty or lute with which to seal the joints, and a mixture was made by the stove and furnace manufacturer of linseed oil and pigment, or of clay or other pulverized pigments and silicate of soda. This mixing in most cases was done by hand.

This method was not satisfactory due to lack of uniformity and the troubles encountered in selecting raw materials, and the demand gradually grew for a prepared product.

About fifty years ago Mr. Bowen, the president of our company, realizing the need for a high grade material as a lute for furnaces, mixed some clay, sand and silicate of soda with asbestos fibre with some degree of success, but unfortunately this concoction would not

keep in a package, getting very hard in a short time.

Our start in manufacturing stove putty and furnace cement was prompted after a visit to the Jewett Stove Company, Buffalo, in 1880, when Mr. Bowen's father suggested he prepare a ready for use product to meet their needs, and after some experimenting a product was developed which found a ready field.

Many difficulties were encountered during the early days, due principally to "rule of thumb" methods and complaints seemed to be a regular routine. Today while we all have our troubles, we are at least in a position to investigate our subject with a better understanding of the principles involved and are able to make the necessary moves, as may be prompted by the problem at hand.

Many grades of silicate of soda are on the market, most of which are not suited for the manufacture of furnace cement, and the proper grade must be selected with considerable care. When we consider there are at least twenty grades ranging in alkalinity from about 6 to 24 per cent alkali, one can readily see the proper material can only be chosen after considerable work, both practical and experimental.

The materials are mixed in proportions which the manufacturer has determined will best meet the needs, and is quite variable in the cements now on the market, as can readily be noticed both by their drying time and by their action when aid dried or heated.

Furthermore, precautions must be taken to prevent as much as possible a separation of the fluid portion of the cement, and while this separation may develop, it is usually slight even after long standing. A homogeneous mix usually depends on absorption and particle size, as well as consistency.

#### The Requisite Properties.

A heavy plastic material weighing approximately  $15\frac{3}{4}$  to 16 pounds per gallon.

Exposed to air, it dries slowly, remaining pliable after several months. The formation of the

initial skin is variable at time a film forming on the surface within thirty minutes in a dry atmosphere, while in a moist atmosphere this film will not be formed, the cement remaining soft due to absorption of moisture. If this moist condition continues a state will be reached where the cement will be softened to a point it will start to sag and run, that is pull away from the casting. The excess moisture absorbed, dissolves and leaches out the binder and the solution may flow from the cement. A condition of this kind is always bad. The cement is weakened because it has lost some of the binder, and when fired the cement has a tendency to powder.

Furthermore, marked whitening or frosting takes place when the cement eventually dries, due to the greater amount of binder drawn to the surface and subject to the attack of the atmosphere.

Cement which has been subjected to prolonged dampness will always show excessive shrinkage and whitening upon drying.

When the cement takes on a quick initial set, better results are obtained because the film formed prevents to a great degree the evaporation of the moisture in the cement, a slow drying-out process taking place where little or no silicate of soda is drawn to the surface and the tendency to whiten is greatly diminished.

All cement which contain silicate of soda will whiten when exposed to the air, and the extent of this action depends largely on the grade used and the speed of drying. The whitening or frosting of a cement joint is due to the action of carbon dioxide in the atmosphere splitting up the silicate of soda and forming sodium carbonate. Aside from the appearance of the joint little or no harm is done to the cement, unless this action has been excessive due to conditions as described above. However, there should be no cause to complain as the furnaces are all encased and most of the cemented joints do not show.

It is well to remember sodium carbonate which is formed when ce-

ment whitens is an efflorescent salt and *will not* absorb moisture from the atmosphere, and should be looked upon as a protection medium for the cement. This whitening action can be prevented to a great extent by painting the joint after the cement has dried with a heavy mineral oil. Vegetable oils should not be used. Painting the cemented joints on furnace parts which are to be stored with mineral oil is good practice, particularly if stored in a damp atmosphere.

Heated slowly to temperatures of 400 to 500 degrees F. the cement bakes to a hard stone like mass, solid and compact and comparatively free of pores. With increased temperatures increased hardness is developed.

Asbestos furnace cement when properly made *will not* shrink when burned. On the contrary it has a tendency to expand and fill up the joint, and when precautions are taken that heat is not raised too rapidly, a close grained cement with minimum porosity is the result which is extremely hard and stone-like.

When quickly heated, it swells and blisters, is very porous and cracker-like and easily broken.

The method of heating is extremely important. The heat must be raised slowly to expell the moisture which the cement contains, and if this precaution is not taken the bond between metal and cement is broken, due to escaping steam and the cement itself is honeycombed.

The effect of quick heating can readily be seen if the sample of cement is put into a hot furnace. It will blister and swell and when broken will be extremely porous and cracker-like. The opposite effect will be noticed if the cement is gradually heated to drive off the moisture before getting too high a heat. The burned sample will be solid and compact, practically free of pores, hard and stone-like, sticking firmly to the metal.

#### Porosity of the Cement.

The method of heating is of extreme importance, as can readily be seen by determining the porosity of asbestos furnace cement burned un-



der various conditions. The porosity will vary from 0 to 2 per cent in a well burned sample (where heat has been applied slowly) to 19-20 per cent where quick heating has been resorted to. This variation of porosity certainly indicates the advisability of serious consideration of the proper method of firing a furnace when first installed so that we will produce a joint which is practically gas tight.

A cement joint which is solid and compact is less subjected to attack by the furnace gases, as the destruction for the most part takes place only in the surface, and is naturally slow. In porous cement the destruction may take place throughout the mass and the cement crumble and powder.

Steel radiators may cause trouble due to the character of the material used to protect the steel sheets from rusting. In some plants, the steel sheets are coated on arrival and in other plants the radiators may be assembled, mounted with cement and then the finished radiator given a coat of a rust preventative.

The painting of the steel sheets before assembling, from the cement man's point of view, is not the best practice due to the fact the cement acts as a paint remover; that is, the material used as a rust preventative may be saponified, a soap is formed and this soap destroys the adhesive properties of the cement, a film of soap existing between the cement and the metal. Let us assume that no saponification takes place. The condition is equally bad. The coating under the action of heat is carbonized as would be the soap, resulting in either case in leaks, as the bond between cement and metal has been destroyed.

Where the radiators are mounted and then painted the conditions are not so bad, as the action between the silicate of soda of the cement and oils in the coating take place only on the surface or at the edge of the cement, and the bond between metal and cement is *not* broken.

#### Installing Furnaces.

Investigations we have made indicate the greater percentage of our

troubles is due principally to the fact the party making the installation is not thoroughly acquainted with the proper use of furnace cement. This opinion is based not only on our own observations, but those of the practical men connected with the furnace manufacturer, whose mission at times is to remount a so called faulty furnace. A can of cement is sent with each furnace, the sizes of which has been determined as sufficient to produce a satisfactory job. In many cases only half of the cement is used and consequently the joints are not properly filled. The cement is simply daubed in and a strong substantial joint is *impossible*.

Reading the directions for erecting furnaces supplied by furnace manufacturers also the Standard Code regulating the installation of warm air furnaces, Article 4, Section 3, it does not appear to me that we go into sufficient detail to assure a good tight joint, as for the most part we say "All joints shall be well filled," or "Put such and such section in place and fill cup joint with cement."

The practical man who makes the installation in many cases has his own ideas as to setting up a furnace and pays little attention to directions supplied by the manufacturer, and proceeds to do his work as he "always has done it." Many times the various parts will be put in place and then the cementing work is done by simply smearing the cement in the joints.

If cement is not properly applied and care is not taken to avoid air pockets, we cannot look for a tight joint, and leaks will result. In the first place, caution *must be used* to have joints clean. All dirt, dust or foreign matter such as oil or grease *must be* removed. The joint should be cleaned with a wire brush to remove all foreign material, and then the joint should be wiped with a damp cloth.

Some installers thin the cement with water to the consistency of paint and brush this mixture on the joints, after which the cup joint is filled with the heavy cement. This

is good practice and will give excellent results and is to be highly recommended. If this procedure is followed, a strong bond will be obtained between metal and cement.

After cleaning, the cup joint should be filled with cement, care being taken to put cement in joint without the formation of air pockets. The cement should be forced into the cup, and pressed firmly against the sides, that maximum adhesion may be obtained—*not simply laid in*—and the cup should be full. The section should be carefully put in place and allowed to settle of its own weight, avoiding as much as possible the usual twisting of the section, which has the tendency to pull cement from the casting in spots, forming air pockets. The cement which is forced out, when the castings or sections are put in place, should be beveled, smoothing down to a feather edge against the casting. The idea of allowing the casting to settle of its own weight rather than getting it in place by a twisting action is to have the joint continuous and not broken at the tip of the tongue, where the upper section is in contact with the base of the cup.

When castings are put together by twisting the sections into place, the continuity of the cement is broken, and the cement then exists in two sections, one at each side of the tongue, being broken at the point where the tongue comes in contact with the base of the cup. Such a joint is naturally weak and the tendency for leakage is greater than if the cement was continuous.

Good adhesion depends for the most part on clean joints, and the proper application of the cement.

A high graphite casting is not favorable for a good joint as adhesion is weak, the cement will not grip the iron firmly and the tendency of the cement to pull away is more pronounced than is the case where we have a low graphite condition.

If a recommendation for mounting furnaces, based on the above suggestions is properly put before the installer, with the warning—not to set up the sections and then



plaster the joints—I believe our troubles would be greatly diminished.

After the furnace has been erected, a slow fire should be started, sufficient to drive off the moisture in the cement. This first firing is of extreme importance, and should be watched carefully that we may obtain a solid, compact mass of cement comparatively free from pores.

If the firing is too rapid, steam is formed which causes pronounced swelling and honeycombing, and breaks the bond of the cement for metal. Upon this first firing depends the success or failure of the joint. The effect I will try to show with the lantern slides.

When properly burned the cement is extremely strong and hard, and a joint 1/16 inch thick will easily support a load of 100 pounds without breaking.

This is true after repeated heating and cooling of test pieces.

If the initial burning is good we are assured of a lasting job and one free of leaks as the surface of the joint is continuous and unbroken and not liable to deterioration due to the action of furnace gases.

On the other hand, when the cement has been heated rapidly, the surface is more or less porous, the bond between metal and cement is broken, a far greater surface is exposed to the furnace gases and the cement is gradually destroyed and crumbles to a powder.

#### **Fuel Used Also Requires Consideration.**

The character of the fuel, while beyond our control, should be given some attention, as in many cases it is responsible for the breaking down of the cement joint. This is particularly true with fuels of high sulphur content. The sulphur gases readily attack the cement and this is doubly true if care has not been taken in the initial firing and a porous joint is formed. The binder in the cement is destroyed and eventually will be reduced to a powder.

Other furnace gases, carbon dioxide and carbon monoxide, are very feeble in their action, and when

cement is properly burned little or no effect will be noticed.

High volatile fuels, (soft coal) are responsible for many complaints, not only due to the high percentage of volatile matter, but because of their sulphur content.

When we consider the accumulation of gas (due to heavy firing) in the furnace, below the ignition point, we can readily understand something must go when the ignition point is reached. We have had reports that the top sections of some furnaces have been lifted out of place. There is little wonder then, the above being true, we should receive reports that the cement had exploded or been blown out of the joint and was found sticking to the casting.

When oil burners are used, the question has been raised, is the cement the proper material for making the joints tight?

In all cases the control, no doubt, will be automatic; that is, the burners will be so regulated, that a given temperature will be maintained at all times, and no pronounced lowering of temperature will take place, as would be the case if a fire goes out, as occurs with the ordinary coal fire. The temperature being more constant indicates we should look for better results in the cemented joints than we now get in the ordinary coal fires.

However, higher temperatures can be reached with oil than can be obtained with coal, and the temptation is great to start a newly installed furnace full blast to demonstrate its quick heating feature.

If this procedure is taken, the cement will fail. It will blister, swell, become honeycombed and will not stick to the casting, and this will happen no matter how great the care taken in mounting the furnace with cement.

If the heat is raised quickly, the moisture in the freshly applied cement is converted into steam, and being confined in the mass, causes pronounced swelling and honeycombing. Miniature explosions may take place and the joint will be destroyed. The question has been

raised as to the effect of high temperatures. Surely this temperature will not be greater than the melting point of iron, and as asbestos furnace cement will stand where iron melts, we feel secure on this point, and doubly so because we have used it for many years as a lining for our oil burning furnaces.

Should there be a condition where the cement is open to attack by a sharp tongue like flames, the present cement would not stand up nor will any cement or lining that I know of, without constant attention.

We cannot expect a good job unless it is done right, and it appears the only way we can eliminate some of our troubles of the past, is to start a campaign of education whereby the installer may be properly instructed as to the use of asbestos furnace cement.

We are firmly convinced such a campaign will eliminate most of the troubles of a leaky furnace and produce results which we both expect.

#### **Thomas W. Pearson Has Charge of Furnace Sales Department of Thomas & Armstrong Company**

One of the visitors to the Annual Convention of the National Warm Air Heating and Ventilating Association held in Cleveland the past week, was the well and favorably known Thomas W. Pearson, who has recently been appointed Sales Manager of Thomas & Armstrong Company, who have recently entered the furnace manufacturing business.

Messrs. Armstrong and Thomas have long been prominent in the sheet metal manufacturing business, making garages, corn cribs, troughs, etc., and judging from their past, it is only fair to assume that they will make their mark in the warm air furnace field, making a good product that can be bought at a fair price. They will specialize on a steel furnace which they will make in five sizes. Their factory is now in full production.

Mr. Pearson will have his headquarters at 75 North Front Street, Columbus, Ohio.

## Zanesville Ohio Sheet Metal Men Adapt Unique Method of Soliciting New Members.

*Arouse Interest at Meeting Recently Held Which Looked Serious for at Least Two Members.*

HERE is a letter which the Zanesville, Ohio, Sheet Metal Contractors' Association is using to solicit new members. The idea contained therein is a complete surprise and could be used with good results by other sheet metal men facing similar problems.

The letter follows:

"If you had attended the meeting of the Sheet Metal Contractors' Association of Zanesville last — you would have heard such pioneers of the industry and association work as George Thesmacher, John Weigel, J. D. Keeley, Arthur Lamneck and M. B. Armstrong say, with enthusiasm, that they were abundantly compensated by the value received for taking time and going to the expense to travel from their distant homes to attend this meeting. You would have heard such sterling business men as Bud Denney and Charles Fleming of the nearby town of Cambridge, friends and competitors for many years, state that they had obtained their first real vision of the great benefits that can come from active association work. You would have seen plain business men overcome self-consciousness and a score of sheet metal contractors following each other discuss at length in a clear, forceful, earnest and logical manner the many intricate problems of their industry that were suggested and brought forward by the incidents of the meeting. Then you would have been convinced that the processes of the executive side of the business, while fairly well appraised, were still the greatest source of anxiety and loss and wholly so for the lack of that coöperation which begets mutual confidence, collects and exchanges experience, stimulates mental industry and concentration, and results always in solving problems. We know of no other method to bring these good results about, but through the asso-

ciation of men with kindred interests and like perplexities and who through that medium will apply themselves loyally to the task.

"There are sixteen sheet metal contractors in Zanesville and for years thirteen of them have maintained one of the most cohesive and effective associations in the whole country. Their dues are \$25.00 per year and they maintain a downtown club room.

"This notable meeting was a complimentary banquet and musical entertainment to the sheet metal contractors of the adjacent territory, the members of the Columbus and Newark association and the directors of the state association.

"After the sumptuous dinner, and excellent entertainment were finished, the assembly was resolved into a regular business meeting of the Zanesville association and the regular order of business from 'roll call' to welfare of the association was followed out. Under the last order, a member brought to the attention of the meeting in a very thorough manner, a recent experience in competition, which craftily violated many phases of decent ethics and good business practice. Through inquiry from the members it was revealed that the offending competitor was a member of the association and was present and upon further urging the plaintiff reluctantly named him. This brought the interested parties face to face and the duel of words proceeded in an extremely earnest, but orderly manner while the guests with bated breath were anticipating an embarrassing situation. There were so many phases of experience involved that many joined in the discussion and the guests were invited and did participate and used their best efforts to pour oil on the troubled waters.

"In the end when all of the facts were arrived at, it was very plain

that neither of the competitors had originally offended and that the whole trouble arose from the customer skillfully using innuendoes calculated to arouse distrust between the competitors and in their eagerness to suspect each other of bad business practice they translated the vague inferences into statements of fact and then proceeded to injure each other and their industry. After this frank and candid intercourse the benign influence of a proper understanding was better understood and appreciated and the two belligerents covenanted to have more faith in each other.

"This romance was so artfully prepared and realistically acted and so true to experience that its fidelity was not suspected until the chairman pronounced it all a hoax."

The following named men were in attendance at the Zanesville meeting: E. H. Erk, H. S. Haslett, W. J. Kaiser, A. E. Bogen, Stanley Allen, G. F. Mooney, A. E. Munkel, A. P. Lamneck, J. R. Dunn, all of Columbus; Charles Fleming and Bud Denney, of Cambridge; J. D. Keeley and J. W. Weakley, of Newark; W. H. Webster, C. O. Culver, J. T. Shaw, Gus Miller, L. H. Weber, C. E. Waller, J. W. Hoffman, R. E. Gaff, F. M. Parker, J. W. Ludy, C. F. Saup, W. L. Hutchins, C. E. Snyder, W. H. Roe, L. W. Henslee, all of Zanesville; W. Anderson, of New Concord; M. B. Armstrong, London; George Dietz, Jr., and John Weigle, of Cincinnati; George Thesmacher, of Cleveland; A. W. Froam, of Chillicothe, and W. C. Myers, Dover.

### *What Dimensions Should a Four-Foot Bath Tub Have?*

TO AMERICAN ARTISAN:

Will you please give me a good dimension for a bath tub about four feet long at the bottom?

I should like to know what width to make the top and bottom, and how high to make the tub.

"SUBSCRIBER."

Read every page in this issue.

## Sheet Metal Men Should Advertise Furnace Repairs During Summer Before Building Begins.

*Kothe Says This Practice Will Keep Men Busy Year Around and Thus Minimize Labor Turnover.*

Written Especially for AMERICAN ARTISAN by O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri.

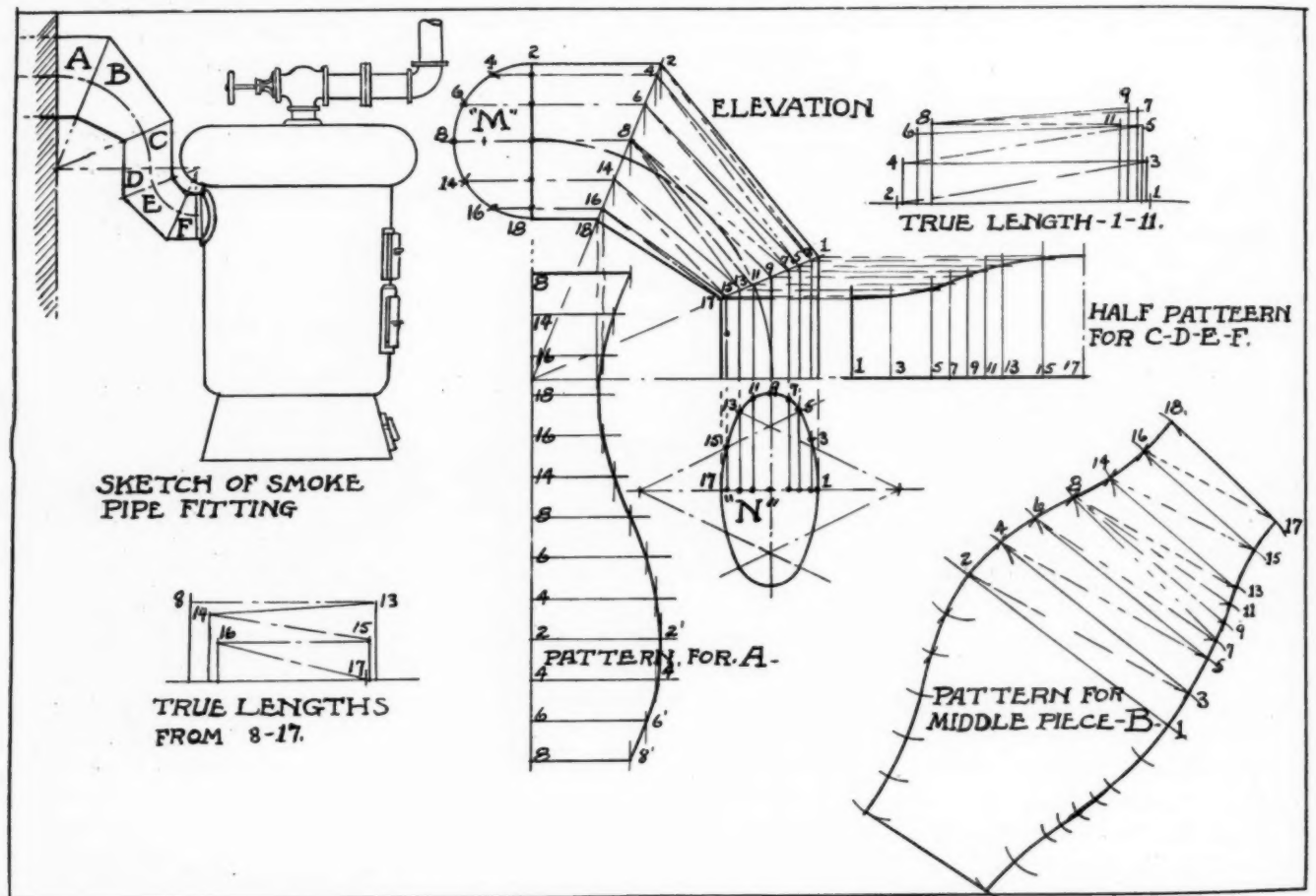
**S**HEET metal shops in the fall of the year are quite busy in doing heater repair work for warm air furnaces.

In the case at hand we show a peculiar connection for a hot water heater where the elbow must be made elliptical on one end and round on the other to fit the flue. Some

mediate repair work is over, in order to distribute the work more evenly throughout the year. As it is now, in the fall of year most of the heating repair work, the necessary outside pre-winter repair work and all of the new building work come in together.

By figuring out an operative plan

workers who will become schooled in the policy of the shop and who will depend more and more on that shop; in fact, some of the good old loyalty of the long ago will be re-established. The employers are much to blame for the shifting tendency of mechanics in vogue nowadays, because the men must go



Pattern for Heater Where Elbow Must Be Made Elliptical on One End and Round on the Other.

chimneys have a rather low flue opening which makes no great allowance for a connection. Such problems can be considered emergency problems and they require more time than the standard stock sizes. Sheet metal shops should make the effort to do this kind of work during the summer, when building work has not yet begun, and when the spring's rush of im-

for educating the public to have its heater work and outside repairing done in such seasons when the new building work is not yet ready, the shop can keep busy and make money, the men keep steadily employed, and the customer does not need to pay overtime wages for rush work.

In the same way every shop will build up a better organization of

where there is work, and if one shop cannot keep them busy, they may be more fortunate in another. In that way the men have not really any place to look to; their future is always a blank, more or less, and this accounts a great deal for the disinterestedness of the men for the employer's welfare. The writer is saying this because he knows it is a great outstanding evil in the trade,



and especially that the employer cannot conduct a successful business without a good organization of mechanics; nor can the mechanics ever expect to enjoy those conditions that are exclusive to the old-time established business, unless there is work in the shop. And so it is with smoke pipe work, as well as many other kinds of work.

In this case, however, we have an elbow that needs development. Our sketch shows three different kinds of patterns are necessary, namely, the one at A, B and C, while the parts D-E-F can be marked off from the pattern C. In reality patterns A and C are laid off the same as any ordinary elbow by the projection method.

We first describe the center line of elbow and divide this into four equal parts, which establishes the miter line as shown. Then we describe the section "M" and "N," divide them in the number of spaces convenient for the work, and extend our lines to the miter line shown. This enables us to project the pattern for A and C as shown, while the pattern for B must be developed by triangulation. Here true lengths must be developed by picking the elevation lines as 1-2; 2-3; 3-4; 4-5, etc., and setting them on the base line of the diagram. After this we erect lines and make them equal to the half diameters of section "M" and "N." This enables joining these points and makes the true lengths for developing our pattern.

In setting out the pattern, we must use the girth spaces from the miter cuts of pattern A and C, because the edges of the middle piece B must fit to these edges in A and C. So draw any line as 1-2 equal to 1-2 of the elevation and then describe the arc 2-4 equal to 2'-4' of pattern A. Pick the girth 1'-3' from pattern C and set in pattern as arc 3.

Pick the true length 2-3 and 3-4, and using 2 in pattern as center, cross arcs in point 3.

Next, use the new point 3 as center and cross arcs in point 4, with true length 3-4. Continue in this way until the points 17-18 are established. After this draw lines through

all points where arcs cross, and you have the pattern for the middle piece. Edges for double seaming or riveting in the miters as well as the longitudinal seams must be allowed extra, otherwise the different pieces will telescope.

We should say that the section "N" is described as becomes the length and the width of the collar casting on the heater, and sometimes it is necessary to lay a piece of sheet iron against it and mark out the exact shape which is then used as a section in developing the patterns.

### *Lichty Metal Products, Iowa, Now Established in Its New Home.*

The Lichty Metal Products Company, Waterloo, Iowa, manufacturer of skylights and ventilators exclusively, are now established in its new home.

This company has had a very successful career owing, no doubt, to the fact that its founders spent several years in service as sheet metal

basement is located the heating plant and storage for sheets and glass. The first floor is devoted to work shop, the front section being closed off and occupied by the offices and drafting room. Lighter stocks occupy the top floor of the three story part.

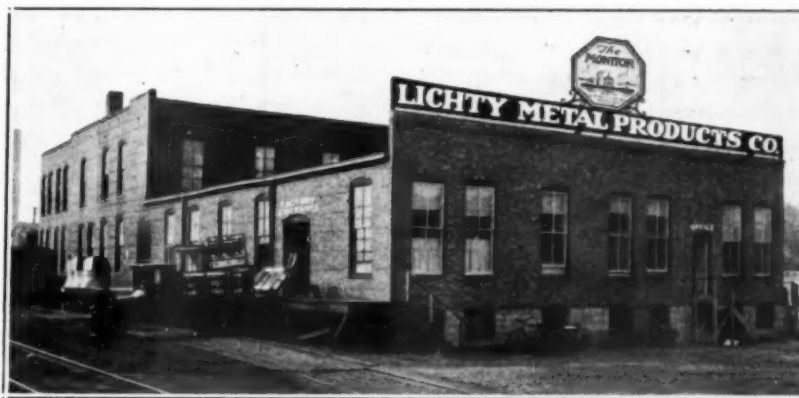
Ample shipping facilities are provided by a loading platform having a capacity of four cars at one time.

The company employs a ventilating engineer who not only designs its goods, but whose services are at the call of its customers who have ventilating problems to solve.

The popularity and merit of its products may be judged from the fact that in the seven years the company has been in existence it has manufactured and sold more than fifteen thousand of its Monitor Suction Ventilators.

The company issues a comprehensive catalog, in addition many special folders and maintains a conservative but persistent advertising campaign.

N. A. Lichty, the president, is



**New Factory Building In Which the Lichty Metal Products Company, Waterloo, Iowa, Now Conducts Its Business.**

contractors and thoroughly understand the contractor's needs. Its sales policy, too, as it applies to contractors, is unique and attractive, hence it is enjoying an exceptionally good business in contracting lines.

The company was organized in 1917 and has grown until it now occupies its own home as shown in the illustration. The building covers a ground area of 60x150 feet, with a basement floor under the entire building. The rear part is two stories above the basement. In the

past president and now a director of the Iowa Sheet Metal Contractors' Association, which ranks among the liveliest associations in the United States.

### *Milwaukee Corrugating Company Issues New Price Lists.*

Thirty-five thousand dealers have just received, from the Milwaukee Corrugating Company, the new revised confidential net price book, effective April 15, 1924, covering

the complete line of Milcor Sheet Metal Products and Milcor Fire-proof Expanded Metal Products.

The physical appearance of the book is similar to the practical style in which Milcor net prices have been available for many years—ninety-six pages in a light, compact booklet, convenient for carrying in the pocket if desired.

The Milwaukee Corrugating Company wants all dealers to have these prices and any dealer who has failed to get his copy can secure one by requesting it on his letterhead, addressing the Milwaukee Corrugating Company, Milwaukee, Wisconsin.

### ***Detroit Sheet Metal and Roofing Contractors Hold Rousing Meeting.***

Another rousing meeting of the Detroit Sheet Metal and Roofing Contractors' Association was held at the Elks' Club on Monday, April 14th.

It was in the nature of a dinner meeting, with special entertainment features, such as community singing and music furnished by an orchestra composed of sheet metal dealers. William Busch, as chairman of the Entertainment committee, certainly proved himself to be a splendid organizer of an entertainment program.

The meeting which followed the dinner was in charge of Vice-President William Sullivan. The first speaker was Mr. Dowling, General Manager of the Bureau of Credits. He gave an interesting talk on credits. He explained the various phases of credit extension and suggested that the members get in touch with his bureau by telephone as soon as they received an order from a new customer.

Chris. Young gave another of his many blue print demonstrations on how he would start into the sheet metal business with a capital of \$3,000. Mr. Young based his allotment for each department on a percentage basis, allowing only certain sums for merchandise, accounts receivable, and volume of business. He proved that it would be possible for an owner of a business of this

kind to make a greater percentage of profit than the concern with a much larger capital. His talk was thoroughly enjoyed.

F. E. Ederle, Secretary of the State Association, explained the trip to Quebec, giving full details of the entertainment features and of the expenses which are to be paid on each ticket. At the conclusion of his talk several members signified their intention of taking this trip.

Community singing completed one of the most successful meetings ever held by the Detroit association.

### ***New York State, Sheet Metal Contractors Will Convene at Syracuse April 30.***

The New York State Sheet Metal Contractors Association will be held at Syracuse, New York, April 30th. The Larned Building of that city will be used for the meetings instead of the Onondago Hotel as originally announced.

A letter from President H. A. Daniel states that the meetings will be open to any bona fide sheet metal contractor who has a regular established place of business in New York state regardless of whether he is a member of the state or national association.

This applies to employing tin-smiths, as well as to those who go under the designation of sheet metal workers.

H. E. Hessler will give the "Welcoming Address," not over 10 minutes long.

Royal H. Bradley will speak on "The Closed Shop."

A letter from Otto Goebel of Syracuse, New York, states that the delegates from all over the state and from elsewhere are requested to leave their lunches and pocketbooks (except their railroad fares) at home, as the association voted to pay for the dinners of all persons present, and the committee will see that the wishes of the association are fully complied with.

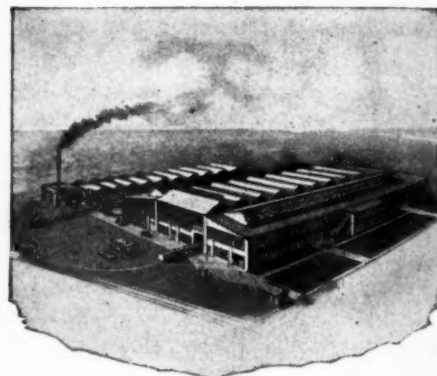
Should the meeting extend into the late afternoon, say 6:00 p. m., we will see to it that the delegates do not go home hungry.

### ***Clayton & Lambert, Detroit, Continue to Expand Their Business.***

The new, modern steel factory which was built about four years ago by the Clayton & Lambert Manufacturing Company at Knodell Avenue and D. T. R. R., Detroit, Michigan, to take care of the increasing demands of their trade and to properly house the various kinds of work required in the production of their gasoline and kerosene firepots and torches, is now being operated at its full capacity.

In addition they are using Plant No. 2 at Beaubien Street and Trombley Avenue, Detroit, their former location which for over twenty years was the home of the C. & L. torch and firepot business, prior to moving into their new factory.

Plant No. 2 is equipped with the latest improved machinery, an elaborate system of conveyors and



**Clayton & Lambert Plant No. 1  
Which is of Modern Steel  
Construction.**

up-to-date facilities, for assembling and testing their tools, which greatly assists in the economical quantity production of their quality line. These conveyors operate in stages, carrying the raw materials and machined and finished parts to the assembling department, where the tools are tested by burning, carefully inspected to see that all parts function properly, and are packed ready for shipment. It is claimed by the makers that their enlarged, up-to-date factories have the capacity for making and shipping several thousand firepots and torches per day.



A new and comprehensive folder explaining torches and firepots is exceedingly interesting, and will prove highly educational for those interested in these tools.

### **Program of Missouri Sheet Metal Contractors' Convention, April 22 and 23**

The following program will be carried out at the convention of the Missouri Sheet Metal Contractors, St. Louis, April 22 and 23.

#### **Tuesday, April 22nd.**

Meeting of Board of Directors.  
Registration and Distribution of Badges.

Meeting Called to Order.

Address of Welcome, by James McQueeney, Vice-President Chamber of Commerce.

Response by Charles T. Kornbrodt.

Reading Minutes of Previous Meetings.

Appointment of Committees.

Report of Officers—President, Secretary, Treasurer.

Report of Cities.

Business Ethics—Harmony—Speaker to be supplied.

Association Work, by John H. Hussie, Omaha, Nebraska.

Sheet Metal Problems, by D. M. Strickland, St. Louis.

Credit and Collection, by J. E. Woodmansee.

Question Box.

Banquet and Entertainment (by card only).

#### **Wednesday, April 23rd.**

Subject Selected, by S. W. Millis.  
Cornice Work, by George Harms, Peoria, Illinois.

Oil Burner, by W. W. Howe, Ideal Heating Company.

Julius Gerock, H. W. Symonds.

Question Box.

1:30 p. m.

Auditing Committee's Report.

Nominating Committee.

Election of Officers.

Election of Delegates to National Association.

Selection of Convention City.

Entertainment—Auto Trip of City.

## **Notes and Queries**

### **Carbide Light Supplies.**

From W. B. Jordan and Son, 510 5th Street, Lynchburg, Virginia.

Please advise us where we can buy carbide light supplies.

Ans.—J. B. Colt Company, Chattanooga, Tennessee.

### **Siren.**

From D. Dambrink, 28 First Street, N. W., Le Mars, Iowa.

Please advise me where I can get a siren for a fire truck which can be operated by hand.

Ans.—Federal Electric Company, 8700 South State Street, Chicago, Illinois.

### **Metal Row Boats.**

From N. Moeller, 46 Jefferson Avenue, Oshkosh, Wisconsin.

Can you tell us who makes metal row boats?

Ans.—Michigan Steel Boat Company, Kercheval and Connors, Detroit, Michigan; Illinois Boat Company, 4032 North Rockwell Street, Chicago, Illinois, and Everett-Hunter Boat Company, McHenry, Illinois.

### **"Rising Sun" Stove Polish.**

From Asemissen and Klinger, Oelrichs, South Dakota.

Will you please let us know who makes "Rising Sun" stove polish?

Ans.—J. L. Prescott Company, 363 West Erie Street, Chicago, Illinois.

### **Address of Gurney Heater Manufacturing Company.**

From Stove Dealers Supply Company, Milwaukee, Wisconsin.

Can you furnish us with the address of the Gurney Heater Manufacturing Company?

Ans.—Boston, Massachusetts.

### **Eye Bolts.**

From Wright and Patterson, Hardware, Bethesda, Ohio.

Please inform us as to where we can get 1/4x13-inch galvanized eye bolts for porch swings.

Ans.—Thomas Laughlin Company, Portland, Maine.

### **Metal Window Frames.**

From Frank Berryhill, Ardmore, Oklahoma.

Will you please give me the names and addresses of manufacturers of metal window frames?

Ans.—W. J. Burton Company, Junction and Federal, Detroit,

Michigan; David Lupton's Sons Company, 28 East Jackson Boulevard, Chicago, Illinois; Consolidated Sheet Metal Works, 661 Hubbard Street, Milwaukee, Wisconsin; Kawneer Manufacturing Company, Niles, Michigan; Harry C. Knisely Company, 1912 South Western Avenue, Chicago, Illinois; Western Steel Products Company, Duluth, Minnesota, and Klauer Manufacturing Company, Dubuque, Iowa.

### **Franklin Stoves.**

From Security Stove and Manufacturing Company, Kansas City, Missouri.

Who makes a Franklin stove of the very old type—that is, with no front in it?

Ans.—Wood and Bishop Company, Bangor, Maine; Portland Stove and Foundry Company, Portland, Maine, and Noyes and Nutter Manufacturing Company, Bangor, Maine.

### **Glass Stove Leg Rests.**

From J. C. Hummel, 4931 Rosehill Street, Philadelphia, Pennsylvania.

I should like to know who manufactures glass stove leg rests.

Ans.—Jennison Manufacturing Company, Fitchburg, Massachusetts; Empire China Works, 156 Greene Street, Brooklyn, New York, and Onward Manufacturing Company, Menasha, Wisconsin.

### **Indoor Chemical Closets.**

From Bogue and Johnson, Beresford, South Dakota.

Who makes indoor chemical closets?

Ans.—Independent Register and Manufacturing Company, Perry-Payne Building, Cleveland, Ohio; Smith System Heating Company, 821 Washington Avenue, S. E., Minneapolis, Minnesota, and Waterman-Waterbury Company, 1121 Jackson Street, N. E., Minneapolis, Minnesota.

### **Tin Speaking Tubes.**

From C. G. Delzell and Sons, Damascus, Ohio.

Who makes 1-inch speaking tubes of tin?

Ans.—W. R. Ostrander and Company, 371 Broadway, New York City. They are carried in stock in Chicago by the Ohio Distributing Company, 624 West Adams Street.



## Thomas E. Parnell Lauds Charles H. Ireland in Behalf of Old Guard for His Inspiring Jacksonville Address.

*Relates Purposes and Aims of Old Guard Before Hardware Manufacturers and Jobbers at New Orleans Joint Convention, April 10.*

THE following address was delivered by Thomas E. Parnell before the members of the American Hardware Manufacturers' and the Southern Hardware Jobbers'



Associations, in convention at New Orleans, Louisiana, Thursday, April 8 to 11:

It was decided by the officers of the Old Guard Southern Hardware Salesmen's Association that the association would be lacking in appreciation if it had failed to express publicly its thanks to Charles H. Ireland for the edifying address he gave last year to them in a joint session with the Southern Hardware Jobbers' Association held in Jacksonville, Florida.

It is to demonstrate openly the gratitude of the Old Guard to Mr. Ireland that a few moments of your time is now sought. When our President, Fred Huggins, requested the speaker to represent the Old Guard at this meeting, the very idea of addressing such an august body as is now here caused worry; in fact, the picture of stage fright, utter collapse, and internal disintegration, were as vivid to my mind as a watermelon or chicken is to the eye of a negro.

Now good people if there should be any here who think their sleep last night was not completed, and they wish to lapse into unconsciousness for a few moments or so, why no objection is raised, providing the nasal sounds are not broadcasted so as to bar our gracious friend, Charles H. Ireland, from hearing the message from the Old Guard.

Mr. Ireland, permit it to be said

that it is deemed a privilege to be able to express to you on behalf of the Old Guard Southern Hardware Salesmen's Association "its thank you very much indeed" for the eloquent address you so ably presented at our last meeting. The whole substance of your remarks was indelibly impressed upon our memory, and absolutely conveyed beyond a doubt the high standard of manhood the commercial world demands today of salesmen. Vividly you portrayed in a delightful and fascinating manner, the crude and subtle character of the first salesman mentioned in history, and there is a foundation for great rejoicing in being able to realize evolution has taken hold of humanity, and brought the salesman to the standard acceptable to such generals of business as those who are members of the Southern Hardware Jobbers' Association.



Top Row (Left to Right)—W. A. Corry, John E. Haviland, W. P. Bailey, N. A. Gladding, Thomas E. Parnell, James T. Skelley, F. Herbert Smith, James S. Bonbright, John Prosser Tabb, A. R. Sisson, James Hutchinson, George H. Hillman, Walter Huff.

Second Row—Edward J. Newey, Daniel H. Havens, George E. Eddy, Sheffield Clark, George H. Harper, Joseph H. Grubb, R. P. Boyd, Fred M. Huggins, Joseph M. Hottel, Henry P. Chenoweth, Frank A. Bernet, William M. Brezette, Frank Gould, George F. Smith.

Mr. Ireland, the Old Guard most highly esteemed your address, and hope for you long life, all comforts to which you are entitled, and a continuation of your loyalty and friendship.

Mr. Chairman, and gentlemen, there is no desire to encroach upon your patience, but this opportunity is presented to say a few words on what the Old Guard Southern Hardware Salesmen's Association represents. It was originally founded and organized by one whom we all cherish and admire, Fred Huggins, in the year 1908. He is today President of the Old Guard. Old Guard Fred Huggins created, when he organized the Old Guard Southern Hardware Salesmen's Association, no doubt, a monument to himself and a legacy for future generations to enjoy.

The fundamental principles of the Old Guard are the advancement of good fellowship, and keen understanding between salesmen, who have for 15 years continuously called upon the hardware trade in five Southern states.

The maximum membership is one hundred.

We have no charter granted by our civil courts, but are bound together by affection.

We take no oath of allegiance to anything when elected an Old Guard, but we, one and all, have ever and always the most profound love, devotion, respect and adoration for the Stars and Stripes, and the President of our great and progressive country, be he in politics a Democrat or a Republican.

To summarize the attitude of an Old Guardsman, you may be assured he continuously strives to live with love, hope and charity for all with whom he comes in contact.

When an Old Guardsman is called from the ranks, his family receives a substantial token of love and endearment from the ninety-nine Old Guardsmen left to complete their Forward March.

The acceptance of a salesman into the Old Guard Association is a warrant deed for his honesty, integrity and stability, and he cannot

be elected an Old Guard unless he has been intimately identified by members of the Old Guard for fifteen years or more.

Gentlemen, a number of the original one hundred Old Guardsmen are no longer with us, they having received the order from the Supreme Command to march forward. They are resting just beyond the eternal golden horizon in the west, sleeping in the beauty of the lilies, the perpetual fragrance of the flowers being fed by the loving thoughts which vibrate in our hearts day by day.

No nobler body of traveling men ever walked the earth than those who were once living members of the Old Guard. With their character and life you are acquainted. Their fidelity to duty stands as a beacon light to guide us through the path they traveled.

Were one to ask for a summary of the character of any Old Guardsman who is with us no more, it would be given in these cherished words:

"He was gentle, he was kind, and the elements so mixed in him that nature could get up and say to all the world, this was a man."

You have generously listened to an attempt to describe the virtues of late members of the Old Guard. It is desired you will not chide me for saying, high as the standard of living must be before obtaining admittance into the Old Guard, sincerely it is stated in my travels for many years, from Bristol, Virginia, to El Paso, Texas, I can draw to mind no jobber of hardware whom the Old Guard would not be proud to accept as a member if our charter permitted.

This statement is made in deep sincerity, not from myself only, but with the knowledge of the members of the Old Guard I have now the honor of representing.

Mr. Chairman, and gentlemen, if any of you are disappointed at not hearing mentioned the name of the particular Old Guard friend who has passed into the untraversed West, do not imagine a single member of the Old Guard is ever for-

gotten, as those who have preceded are ever faithfully remembered, as they bore the standard of example ever high, never faltering at difficulties, tribulation, sunshine or darkness, and as I think of the time when the original one hundred Old Guardsmen were present with us, when I think of their noble actions, their undeviating determination to do noble things, rather than dream them all day long; when I think of the heritage they have left behind them, and their willingness ever to dare to do or die for what they conceived to be right, my whole human nature, yea my whole soul, shouts out in unstinted thankfulness at being able to realize I was favored in having life in the days when the original one hundred Old Guards were with us, when I could call each and every one by their first name, clasp them by their hand, call them old friend, Old Guard.

### *Cheer Up! Here Are a Few Items That Are Not Taxable.*

Not infrequently taxpayers include in their income tax returns items that are specifically exempt from taxation. Among these are the following:

Proceeds of life insurance policies paid upon the death of the insured.

The value of property acquired by gift, bequest, devise or descent. The income from such property, however, is taxable.

Returns of premium on life insurance, endowment or annuity contracts. Amounts received through accident or health insurance, or under workmen's compensation acts for personal injuries or sickness, plus the amount of damages received, whether by suit or agreement, on account of such injuries or sickness.

Amounts received as compensation, family allotments and allowances under the provisions of the war risk insurance and the vocational rehabilitation acts.

Pensions from the United States for the services of the beneficiary or another in the military or naval service in time of war.

## Crabb Sponges Up Profits Resulting From Clever Deep Sea Window Display.

*Providence, Rhode Island, Window Trimmer Uses Ingenious Method of Reminding Car Owners Spring Has Arrived.*

THE sponge is a very useful article and particularly at this time when cars are being brought into more general use than they have been during the winter.

Howard C. Crabb recently conceived the idea of making a window display of sponges, and the accom-

window and it went over big.

"The center or background of this display was a large frame ten feet high and ten feet wide. This I set three feet from the back of the window; in the opening I stretched green tarlatan, a thin, stiff, transparent muslin, to give the water

diver, you couldn't help but stop, and when you stopped you couldn't help but see sponges. These I had piled all over the floor and background. Some were priced and some had cards on them telling their variety.

"Among these sponges were scat-



Realistic Deep Sea Setting Used in Conjunction with Sponge Window Display, and Arranged by Howard C. Crabb for the Belcher and Loomis Hardware Company, 83 to 91 Weybosset Street, Providence, Rhode Island.

panying display will show that he succeeded very well, whether or not he was inspired in this subsea adventure by Jules Verne's "Twenty Thousand Leagues Under the Sea" it is impossible to say.

Mr. Crabb describes the display as follows:

"The sponge is one of the many difficult members of the hardware line to show. But this time I conceived the idea of a deep sea sponge

effect. In the back of this was a scene I painted of the bottom of the sea, with a shipwreck, sand, shells, sea weed and fish swimming around.

"Sand, sponges, shells were placed on the floor of this background and a real diving suit with a dummy inside stood in this background.

"Over the top I used eight green lights, and believe me, with those green lights, the green tarlatan and the deep sea background with the

tered odd fish, shells, corals and other deep sea objects."

A hardware store recently found out that out of every 100 customers, 87 bought goods because of the attraction of sight. The remaining 13 people in every hundred bought their goods by the attraction of sound, taste, smell or touch. As a result this department store is making effective use of demonstrations.



### **Wisconsin Retail Hardware Association Issues Window Display Book of Much Merit.**

A book of particular interest to hardware men is "A Year of Hardware Windows," recently issued by the Wisconsin Retail Hardware Association. This book contains a hardware window for every week in the year. In addition to this it contains suggestions for show card messages, sporting goods, tools, lawn mowers, garden tools, as well as fancy displays. It has a complete buyer's schedule of seasonable goods, and companion group sales.

The book was compiled by B. Christianson, assistant secretary of the Wisconsin Retail Hardware Association, and the windows were by George Nitz, and to these gentlemen great credit is due.

In the letter to AMERICAN ARTISAN concerning the book, Assistant Secretary Christianson said:

"In the matter of the window trim book, this was distributed to our entire membership gratis.

"A postal card was sent out introducing the idea and which they were to sign and return. It was explained that the book was valuable and they were urged to write for it, which over 60 per cent of them did.

"Of course, the book was sent to everyone whether they had sent in the postal card or not. However, we feel that the number returning the cards had a special interest in the book, greater perhaps than the others. This would lead to its immediate use upon its receipt in the store.

"There has been considerable demand for this book from merchants outside of the state; so we decided on a price of \$2.00 to them. This is reasonable when one considers that every window in the book was trimmed in a store to serve its full time of one week or over and had to be a business getter before we photographed it."

Among the window displays the following well-known firms are represented:

George M. Clark & Company,  
Division American Stove Company,

showing the Clark Jewel range; The Michigan Stove Company, showing the Garland; The Rudy Furnace Company, showing the Rudy furnace; the Estate Stove Company, showing the Heaterola; the Malleable Iron Range Company, showing Monarch, and The Lindmann Hoveson Company, showing the Alcazar range.

### **Interchangeable Mileage Book Investigation to Be Reopened Soon.**

The National Council of Traveling Salesmen's Associations has received information from Washington that the Interstate Commerce Commission will reopen the Interchangeable Mileage Book Investigation.

The opinion of President Loeb, of the National Council, is that the Association's contention will ultimately be sustained and that the much looked for mileage books will be on sale in the near future.

The head of the Association also stated that they are prepared, when the hearing opens, to bring out evidence of the earnings and return on invested capital of the carriers by rail subject to the Interstate Commerce Act, evidence of the effect of general and special reduction in fare in the past and those now in operation, of the advantages to the carriers from the use of money received in advance through the sale of the proposed scrip coupon book, of the effect on travel and the prevention and limitation of travel by the present levels of fare, of the experience of the traveling public regarding the various levels of passenger fare, of the stimulation of travel to be brought about and the relation thereof to any reduction in revenue from a reduction in fare, of the application of the wholesale principle in all branches of history and specific instances of such in relation to public service and of other matters pertinent to said investigation of the act of August 18, 1922.

Send us copies of your advertisements.

### **Coming Conventions**

Missouri Sheet Metal Contractors' Association, Baltimore Hotel, Kansas City, Missouri, April 22 and 23, 1924. John B. Fehlig, Secretary, 528 Delaware Street, Kansas City, Missouri.

Metal Branch of National Hardware Association, Bellevue-Stratford Hotel, Philadelphia, May 9 and 10, 1924. W. H. Donlevy, Chairman, Philadelphia, Pennsylvania.

Panhandle Hardware and Implement Association, Amarillo Hotel, Amarillo, Texas, May 12, 13 and 14, 1924. C. L. Thompson, Secretary and Treasurer, Canyon, Texas.

National Association of Stove Manufacturers, Hotel Astor, New York City, May 14 and 15, 1924. Allen W. Williams, Temporary Secretary, 52 West Gay Street, Columbus, Ohio.

Southeastern Retail Hardware and Implement Association, composed of Alabama, Florida, Georgia and Tennessee. Convention and Exhibition, Atlanta, Georgia, May 27, 28, 29, 1924. Walter Harlan, Secretary, 701 Grand Theater Building, Atlanta.

National Retail Hardware Association Congress, San Francisco, California, June 16, 17, 18 and 19, 1924. Herbert P. Sheets, Secretary, Indianapolis, Indiana.

Hardware Association of the Carolinas Convention, Wrightsville Beach, North Carolina, June 17, 18, 19, 1924. T. W. Dixon, Secretary-Treasurer, 717-718 Commercial Bank Building, Charlotte, North Carolina.

Michigan Sheet Metal and Roofing Contractors' Outing to Quebec, July 19 to 26, 1924. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Ohio Sheet Metal Contractors' Association, Southern Hotel, Columbus, Ohio, July 22 to 24, 1924. George F. Mooney, Secretary, 213 First National Bank Building, Columbus, Ohio.

Pennsylvania & Atlantic Seaboard Hardware Association Convention and Exhibition, February 16 to 20, 1925, at Philadelphia Commercial Museum. Sharon E. Jones, Secretary.

### **Retail Hardware Doings**

#### **Florida.**

Mr. J. A. Torano, Jr., of Key West will open a hardware store and bicycle repair shop in the new building on Fleming Street.

#### **Indiana.**

Fervenda and Frye have sold their hardware store in Silver Lake to Love and Provines of Akron.

#### **Illinois.**

Ward Hawkins of Keithsburg has purchased the Walter Gray hardware store at Seaton.

#### **Michigan.**

A deal has been completed whereby Don McGuire is now the owner of the store which was recently vacated by The Fenton Cooperative Association, Fenton. Mr. McGuire will open an up-to-date hardware store there.

Joseph Zoet and R. Zoet have opened a new hardware store at 1180 Walker Avenue, Grand Rapids.

## National Stove Manufacturers Will Hold Fifty-Third Annual Meeting, May 14 and 15.

*Hotel Astor, New York City, To Be Scene of 2-Day Convention—  
Open Forum Discussion of Association Welfare To Be Big Feature.*

THE Fifty-Third Annual Meeting of the National Association of Stove Manufacturers will be held at the Hotel Astor, New York City, May 14 and 15, 1924.

It will be remembered that our very active and wide-awake friend, Allen W. Williams, was appointed Temporary Secretary of the association to succeed Robert S. Wood, who died December 27.

The following program of proceedings has been arranged and will be carried out:

### Wednesday Morning, May 14.

Call of Meeting to Order.  
Election of New Members.  
Call of Roll.  
Reading of the Minutes.  
Appointment of Committees.  
Memorials.

Reports of Officers: President's Address, Treasurer's Report, Secretary's Report, Traffic Commissioner's Report.

Reports of Committees.

National Chamber of Commerce, by James A. Lansing, National Councillor.

Executive Committee, by Wm. Henry Warren, Chairman.

Design Registration Committee, by Frederick Will, Chairman.

Simplified Practice Committee, by Frederick Will, Chairman.

Gas Appliance Safety Committee, by W. C. Lindemann, Chairman.

Revision of Assessment Basis Committee, by George D. Wilkinson, Chairman.

Communications.

At the conclusion of this Session those present will be the guests of the Association at a buffet luncheon served in the Meeting Room.

### Wednesday Afternoon.

Address by G. A. O'Reilly, Vice-President Irving Bank-Columbia Trust Company, New York. Subject: "Practical Aspects of Present Day Cooperation."

Address by Charles J. Zusi,

Freight Container Bureau, American Railway Association, New York. Subject: "Packing and Crating Stoves and Ranges."

Welfare of the Association. An Open Forum for the discussion of any pertinent questions.

### Thursday Morning, May 15.

Address by S. V. Dunkel, Cost Advisor Western Central Association of Stove Manufacturers, Chicago. Subject: "Practical Points in Costing Stoves and Ranges."

Unfinished Business.

New Business.

Election of Officers.

Adjournment at Pleasure of Meeting.

## Who Handles "Universal" Oil Burner?

TO AMERICAN ARTISAN:

Can you tell me who handles the "Universal" oil burner, at one time made by the Universal Sales Company, now out of business?

Yours truly,

SUBSCRIBER.

## The Busy Man Finds No Time for Discouragement.

Keep a list of your prospects. Use a convenient indexed note book or better still, a card index. Get after your men regularly. If a man isn't interested in one article, try him with another. If he says he can't buy now, but will be buying three months from now, make a dead set on him three months from now—and keep in touch with him during the interval.

The follow-up system is an important factor in mail order selling. To keep on pounding at a selected list of customers is recognized as better strategy than to blaze away at random. Similarly, the road man who wants to produce results must go after his prospects systematically

and persistently, and keep in touch with them until he lands them.

He must keep busy. The busy man, the man who rallies instantly from the knockdown, finds no time for discouragement.

## Local Patriotism a Strong Weapon to Use on Mail Order Competition.

The mail order houses are selling at a disadvantage in many essential respects. They sell at a low figure, but in almost all cases it is a low-grade stove they offer. If the local dealer talks quality, durability and service to prospective customers he can make his argument much more effective than the low-price talk of the mail order catalogs, because most people are sensible enough to realize that in buying a stove they are buying something that will be in use for a long time, perhaps for a score of years. The folly of a "penny wise, pound foolish" policy in stove buying can be demonstrated with little difficulty.

Local patriotism is another factor that inclines the trade toward the home dealer; most people will undoubtedly give their patronage to the man they know, once they are convinced that, all things considered, the terms he offers are as good as can be obtained elsewhere. The fact that the merchant will send the stove to the purchaser's residence and set it up, while the mail order stove is carted at the expense of the buyer and uncrated and put up by himself, is another argument that weighs heavily. Finally, as a last resort, the merchant can offer to sell the same variety of stove as the mail order house at the same price, plus cartage charges.

## We're Glad to Be of Service to You, Mr. Reisinger.

TO AMERICAN ARTISAN:

Please accept my hearty thanks for the information from E. L. Fink, Patterson, California, through your valuable paper.

M. REISINGER.

Sparta, Wisconsin.



# Pre-Determine the Object of Your Advertising and Then Concentrate Your Effort.

*Spasmodic Random Advertising Is Worse Than Useless Because it Drains Your Resources.*

OFF with the ice skates, on with the rollers. The child's life appears to be one continual round of pleasure, and it is truly remarkable



**UTILITY**

**HARDWARE**





**UTILITY**

Rigid Ironing Tables Cannot wiggle, wobble, slip or slide. Price \$3.75.

Starrett fine Mechanical Tools sold at a discount.

Sargent's 100% Pure Paint contains 75% Pure Lead and 25% Zinc. It will wear longer; price, gallon, \$3.50.

**SHARP BROS.**

Main 4596. 125 W. Wayne St.  
"The Store of Personal Service."

the number of industries engaged in and the amount of material used in the production of toys for children.

Children are naturally persistent in their desires, so that once a toy has caught their eyes, it will be

pretty sure to be brought to the attention of the parents.

The accompanying advertisement, reprinted from the Ft. Wayne, Indiana, *News*, is very good for a small space, but it could have been materially improved had there been something said about the insurance of a child's health by outdoor exercise. This is an appeal which should not be lost sight of in writing advertisements.

\* \* \*

Preparedness was the constant aim of the late Theodore Roosevelt. His thought was that a nation adequately prepared to defend herself would not be so readily menaced by possible enemies as the one with all bars down.

However, in the selling world preparedness means an entirely different thing; it means accurately

anticipating the probable demand and laying in the stock in time so that no customer entering your store, no matter how early in the season, he will not be turned away without the object of his desires.

The accompanying advertisement is reprinted from the *Bloomfield Indiana, News*.

Suggested improvement would be the addition of an illustration or two, and an attention-catching headline.

\* \* \*

There are so many activities opening in the spring that it is not at all difficult for the merchant

**Spring is the Season of Planting**

NORTHERN GROWN SEEDS that are tested, produce the earliest plants and vegetables.





GARDEN TOOLS of every description for the HOME AND MARKET GARDEN.

SPRAYS—All sizes and kinds for all purposes.

SEE OUR WINDOW

**Oscar T. Gove**

HARDWARE—PAINTS 11-13 ELM ST.—PHONE 35

dealing in hardware and kindred articles to create advertisements that will pull business.

The chief factor to bear in mind in this connection, however, is that when a man starts out to spade up the garden he does not want to wait for a dealer to order his fork or hoe. He is impatient to get going before he loses his enthusiasm, and the fellow who has the object of the prospective gardener's desire on tap when he comes along is the man who writes up the profit.

\* \* \*

The rooster makes more noise, but the hen lays the eggs.

## Hardware

### A CAR LOAD OF AMERICAN WIRE FENCING

- |                |                  |
|----------------|------------------|
| —Barbed Wire   | —Gates           |
| —Field Fence   | —Steeple         |
| —Poultry Fence | —Nails—all sizes |

## Seeds

- |          |             |
|----------|-------------|
| —Timothy | —Clover     |
| —Red Top | —Blue Grass |

## Incubators

- Buckeye and Queen

High-test Oil for Incubators and Stoves, per gallon, 20c

### SPECIAL

Auto Oil, 5 gallons for.....\$2.75  
(bring in your cans and get them filled)

**VanMeter Hardware Company**

BLOOMFIELD, INDIANA





# Germany Likely to Accept Dawes' Report—Irrregularity Marks Business and Industry News.

*Merchandise Freight Loadings Increased—Non-Ferrous Metal Shipments Heavy, But New Buying Light.*

**N**EWs of business and industry veered to the cheerful although there was the usual evidence of irregularity. While some tapering off in steel orders and operations continues, there is as yet no important reduction in consumption, except in the automobile field.

"The industry as a whole has an average operation of about 86 per cent of capacity," the Iron Trade says. "While fresh tonnage tapered off and buyers have held back until prices are settled, new business is strikingly large in those fields which for months were the main support of the market, building work and railroads. Stabilization of steel prices at the new lower bases is making progress.

Assurance that business is running pretty well is contained in the weekly report of the railroad freight movement. Car loading for the week ended April 5 totaled 826,096, a decrease of 45,452 from the preceding week and also of 34,279 from the corresponding week last year. But both these declines were attributable to coal loadings, which were 31,460 under the previous week and 40,975 below a year ago.

Aside from coal loadings, the current freight movement was larger than a year ago. Merchandise loadings even increased 16,975 cars, showing that consumption of goods is still exceeding all records for the season of year. In fact, total current loadings, including coal, are about 20 per cent higher than in any previous year, except 1923.

## **Copper.**

Statistics made public for March show deliveries of copper surpassing all records, amounting to 270,000,000 pounds, with refinery production only 218,000,000, so that stocks were reduced by 52,000,000 pounds, to 240,000,000 pounds as

of April 1. Prices declined to 13.37½ cents delivered the past week, though several producers did not meet this price. Casting copper sold down to 13 cents, then recovered to 13.12½ cents and 13.25 cents refinery. After prices had broken 13.50 cents, consumers showed more interest, bought a good tonnage and copper recovered to 13.50 cents, delivered.

## **Tin.**

Straits tin was sold in New York on foreign limits at 48.25 cents and 48.37½ cents, but as all of the afternoon limits were advanced, and as the dealers have reversed their position and were buying April 16 whereas April 15 they were selling, the price has advanced to between 48.75 cents and 49.00 cents for futures and nominally 49.25 cents for prompts.

## **Zinc.**

Although there was more interest April 14 and 15 from zinc consumers than for some weeks past, this has not caused any strengthening, and in fact the competition for this business has resulted in a slight shading of prices.

Most of the inquiries were for early shipment, the natural result of the prolonged absence of buyers.

Prime Western for April-May shipment is pretty generally quoted at 6.10 cents East St. Louis basis, and it seems likely that this figure was shaded April 15, though bids of 6.05 cents have been declined.

## **Lead.**

When the basing lead contract price stood at 8.75 cents, spot lead in the general market was available at 8.50 cents, and when it reached 8.50 cents, there were offerings of spot lead at 8.25 cents.

The latest reduction brings it more nearly to a parity with the

general market for the time being. But the tone of the market is still easy.

Consumers are mostly supplied for their prompt requirements and in many cases well into May, and are holding off from further purchasing.

While consumption is in the main large, the outlook in some lines is not so promising, and meanwhile supplies are increasing.

## **Solder.**

Chicago warehouse prices on solder are as follows: Warranted, 50-50, \$31.00; Commercial, 45-55, \$30.25, and Plumbers', \$29.00, all per 100 pounds.

## **Wire and Nails.**

Demand for wire and wire products from jobbers increased slightly last week but demand from the manufacturing trade decreased somewhat. Fencing and allied products are not moving at the rate the season normally dictates. Operation of wire and wire products mills have decreased but prices are unchanged.

## **Bolts and Nuts.**

Business in bolts and nuts again is slightly less and specifications from makers of farm implements have dropped to an extremely low point. The automobile industry continues to take a good tonnage, although reduced operations in the industry are having effect. The maximum for large machine bolts still is 60 and 10 off but this price is weak.

## **Sheets.**

Although sheet consumers practically without exception are operating at normal or even abnormal rates for this season of the year, new sheet buying continues to slacken.

Stove and range industries, stove



<b>Uniform, Collar Adjustable.</b>		<b>HAMMERS, HANDLED.</b>		<b>Bar Meat.</b>		<b>LEVELS.</b>	
5-inch	Doz. \$2 00	All V. and B.	Each, net	V. and B. No. 26, 1/4", each	09	Disston, No. 28 Asst.	\$22 00
6-inch	2 10	Blacksmiths' Hand, No. 6, 26-oz.	\$1 00	V. and B. No. 28, 1/4", each	16	" No. 18, 20 in., each	1 00
7-inch	2 60	Engineers' No. 1, 28 oz.	1 00			" No. 22, 24 in., each	1 40
<b>WOOD FACES—50% off list.</b>		Farrier's, No. 7, 7-oz.	32	<b>Screw Meat.</b>		" Shafting, 6 in.	10 00
		Machinists', No. 1, 7-oz.	78	V. and B. No. 2, per gro.	6 50	" " 6 in. gr. glass	24 00
				Butchers' "S."		" No. 1 Asst.	5 70
<b>FENCE.</b>		Nail.		V. and B. No. 5, each..	08	" No. 2 Asst.	13 40
Field Fence	60 1/4%	Vanadium, No. 41, 20-oz. each	1 50	V. and B. No. 8, each..	11	" 24-26 in., each	1 00
Lawn	53%	Vanadium, No. 41 1/2, 16-oz. each	1 50			" 28-30 in., each	1 00
<b>FILES AND RASPS.</b>		V. & B. No. 11 1/2, 16-oz. each	1 01	<b>HOSE.</b>		<b>LIFTERS.</b>	
Heller's (American)	60-10%	Garden City, No. 11 1/2, 16-oz., each	75	1/2-in. 2 ply molded..	12c	Stove Cover.	
Arcade	50%			1/2-in. cord	3 1/2c to 10c	Coppered	per gro. \$6 00
Black Diamond	40-10-5%	<b>Tinner's Riveting, No. 1, 8-oz., each</b>	79	1/2-in. wrapped	14c	Alaska	4 75
Eagle	50%	<b>Shoe, Steel, No. 1, 18-oz., each</b>	65	<b>HUMIDIFIERS.</b>		<b>LOCKS.</b>	
Great Western	50%	<b>Tack.</b>		"Front-Rank," Automatic.		Barn Door.	
Kearney & Foot	50%	Magnetic.		In single lots	50%	No. 60 Stearn's..	per doz. \$11 00
McClellan	50%	No. 5, 4-oz., each	81	In lots of 10 or more	50-55%	No. 30	20 00
Nicholson	50%			In lots of 25 or more	50-10%	<b>MALLETS.</b>	
Simonds	60%			Vapor pans, etc., each	50%	Carpenters'.	
<b>FIRE POTS.</b>		<b>HAMMERS, HEAVY.</b>		<b>IRONS.</b>		Fibre Head No. 2, per doz.	\$12 00
Ashton Mfg. Co.		Farrier's, No. 10, 10-oz.	\$1 01	Sad.		" No. 3,	15 50
Complete line		<b>HANDLES.</b>		Genuine Mrs. Potts, nickel plated, per set	\$1 55	" No. 3 1/2,	20 50
Firepots and Torches	52%	Axe.		Asbestos No. 70, per set.	2 10	Round Hickory, per	doz. \$3 00—5 00
Otto Bernz Co.		Hickory, No. 1....per doz.	4 00	Asbestos No. 100, per set.	2 30	Tinners'.	
No. 1 Furn. Gasolene with large shield, 1 gal.	\$ 6 75	Hickory, No. 2....	3 00	E. C. Stearns'.		Hickory	per doz. \$2 25
No. B Furn. Kerosene, 1 gal.	15 12	1st quality, second growth	6 00	No. OA Corner, doz. sets.	\$2 50	<b>MATS.</b>	
No. 10 Brazier, Kerosene or Gasolene, 10 gals.	47 52	Special white, 2nd growth	5 00	No. OB	2 75	Door.	
No. 5 Torch, Gasolene or Kerosene, 1 pt.	7 32	Chisel.		<b>KNIVES.</b>		National Rigid.....	5 & 10 & 5%
No. 32 Torch, Gasolene, 1 quart	5 40	Hickory, Tanged, Firmer assorted	per doz. 55c	Beechwood Handles, 6-inch blade	35%	Acme Steel Flexible.....	50%
No. 36 Torch, Gasolene, 1 pt.	4 05	Hickory, Socket, Firmer, Assorted	per doz. 70c	Beechwood Handles, 7-inch blade	35%	<b>MITRES.</b>	
Clayton & Lambert's.		File	per doz. \$1 20	Beechwood Handles, 3-inch blade	25%	Galvanized steel mitres, and caps, end pieces, outlets..	30%
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas	52%	Hammer and Hatchet.		Cooper's Hoop	25%	Milcor	
West of above boundary line.	48%	No. 1 per doz.	\$0 90	Drawing.		Galv. one piece stamped	40%
Geo. W. Diener Mfg. Co.		Second Growth hickory, per doz.	1 50	Standard	25%	<b>MOPS.</b>	
No. 02 Gasolene Torch, 1 qt.	5 55	Soldering.		Adjustable	25%	Cotton, Star (Cut Ends).	
No. 0350, Kerosene or Gasolene Torch, 1 qt.	7 50	Per doz.	\$2 40	Barton's Carpenters'	25%	Pounds 12' 15' 18' 24'-3-oz.	
No. 10 Tinner's Furn.		<b>HANGERS.</b>		Hay.		Per doz. \$4 00. 4 35 5 50 7 00	
Square tank, 1 gal.	12 60	Conductor Pipe.		Iwan's Solid Socket.....	25%	Enterprise	10 1/2%
No. 15 Tinner's Furn.		Milcor Perfection Wire.....	25%	Iwan's Sickle Edge	25%	Parker	50 & 5%
Round tank, 1 gal.	12 00	Eaves Trough.		Iwan's Imp'd Serrated.....	25%	<b>NAILS.</b>	
No. 21 Gas Soldering Furnace	3 60	Steel hangers	30%	<b>Hedge.</b>		Cut Steel	\$4 70
No. 110 Automatic Gas Soldering Furnace	10 50	Triple Twist wire	10%	Challenge	25%	Cut Iron	4 70
Double Blast Mfg. Co.		Milcor Eclipse Wire	30%	Disston's No. 1	25%	Wire.	
Gasolene, Nos. 25 and 35....	60%	Milcor Triplex Wire	15%	Putty.		Common	1 80
Quick Meal Stove Co.		Milcor Milwaukee Extension.	15%	Common	25%	Cement Coated	3 25
Vesuvius, F.O.B. St. Louis	30%	Milcor Steel (galv. after forming) List plus	12 1/2%	Lander's	25%	<b>NETTING, POULTRY.</b>	
(Extra Dist. for large quantities)		Milcor Selflock E. T. Wire, List plus	40%	Scraping.		Galvanized before weav-	ing 45-10%
Chas. A. Hones, Inc.		<b>HASPS.</b>		Beech Handles	25%	Galvanized after weav-	ing 45%
Buzzer No. 1.....	\$ 9 00	Hinge, Wrought, with staples.	Net	Lander's	25%	<b>NIPPERS.</b>	
" " 2.....	12 00	<b>HATCHETS.</b>		<b>KNOBES.</b>		Nail Cutting.	
" " 3.....	12 50	V. and B. Supersteel.	Each	Door.		V. & B. No. 30.....	75c
" " 4.....	15 00	Broad, No. 1, 24-oz.	\$1 42	Mineral	per doz. \$2 00	Double Duty.	
" " 4 1/2.....	15 00	Half, No. 1, 15-oz.	1 25	Porcelain	2 00	V. & B. No. 60.....	76c
" " 4 3/4.....	19 00	Half, No. 3, 27-oz.	1 25	Jet	2 00	Hoof.	
<b>FREEZERS—ICE CREAM.</b>		Claw, No. 1, 19-oz.	1 21	<b>LADDERS.</b>		Heller's	40 & 10%
Peerless and Alaska		Flooring, No. 1, 20-oz.	1 43	Common, per ft.	25c	V. & B. No. 52, each	\$2 25
1 quart	\$2 95	Shingling, No. 1, 17-oz.	1 20	Common, with Shelf, add 10c		<b>NOZZLES.</b>	
2 quart	3 45	Lathing, No. 1, 14-oz.	1 20	IXL	34c	Hose.	
3 quart	4 10	Lathing, No. 2, 17-oz.	1 25	Challenge, 6 to 9 ft.	55c	Diamond	5 75
White Mountain		<b>HINGES.</b>		10 to 15 ft.	60c	Magic	per doz. \$9 50
1 quart	\$4 25	Heavy Strap, in Bundles.		Kant-Break, per lineal ft.	75c	<b>OILERS.</b>	
2 quart	5 65	4 inch, dozen prs.	\$1 26	<b>LANTERNS.</b>		Chase Pattern.	
<b>GALVANIZED WARE.</b>		5 " "	1 74	Monarch tin, hot blast.....	\$ 8 25	Brass and Copper.....	10%
Pails (Competition), 8 qt.	\$1 85	6 " "	2 12	Dietz No. 2 cold blast.....	13 00	Zinc Plated	40 & 5%
10-qt.	2 10	8 " "	3 54	Best tubular	8 25	Railroad.	
12-qt.	2 20	Extra Heavy T in Bundles.		Competition lanterns No. 0 tubular	6 90	Brass	20 & 5%
14-qt.	2 57	4 inch, dozen prs.	\$1 90	<b>LAWN MOWERS.</b>		Coppered	50 & 5%
Wash tubs, No. 1.....	\$6 00	5 " "	2 01	12-inch	\$5 20	Steel.	
No. 2	6 75	6 " "	2 52	16-inch	5 85	Copper Plated	70 & 5%
No. 3	8 00	8 " "	4 30	<b>Ball Bearing.</b>			
<b>GARAGE DOOR HARDWARE.</b>		<b>HOOKS.</b>		4 blade, adjustable bearing.		<b>OPENERS.</b>	
Stanley	All net	Box.		14"	\$5 20	Delmonico	per doz. \$1 30
<b>GAUGES.</b>		V. and B. No. 9, each	\$0 26	16"	7 80	Never Slip.....	" 00
Marking, Mortise, etc.	Nets	Conductor.		<b>LEATHER BELTING.</b>		Crate.	
Wire.		Milcor		From No. 1 Oak Tanned Butts.		V. & B. per doz.	\$7 25—11 00
Disston's	25%	"Direct Drive" Wrought Iron for wood or brick	15%	Extra heavy, 18-oz.	35%	<b>LEATHER LACING.</b>	
<b>GIMLETS.</b>		Cotton.		Heavy, 16-oz.	40%		
Discount	65% and 10%	V. and B. No. 8, each...	24	Medium, 14 1/2-oz.	40%		
<b>GLASS.</b>		Hay.		Light, 12-oz.	50%		
Single Strength, A and B.		V. and B. No. 1, each..	26				
all sizes	\$3 & 35%						
Double Strength, A, all sizes	84%						
<b>GREASE, AXLE.</b>							
Fraser's							
1-lb. tins, 36 to case, per case	\$ 4 70						
3-lb. tins, 24 to case, per case	7 80						
5-lb. tins, 12 to case, per case	7 20						
10-lb. tins, per dozen	19 40						
15-lb. tins, per dozen	15 30						
20-lb. tins, per dozen	19 80						



pipe and elbow makers; other manufacturers of domestic articles; agricultural implement manufacturers; small tank makers; formed ceiling and cornice manufacturers; automotive and railroad lines, all are furnishing specifications for sheets as needed. Stocks in their hands are low.

Users being able to obtain satisfactory deliveries from any one of a number of sources of supply are not anticipating their distant future needs, but are pursuing a hand-to-mouth buying policy.

Automobile and automobile parts manufacturers, particularly the body makers, have been ordering freely and the tonnages involved have been large in the aggregate.

Some makers report that business from auto body makers the past two weeks has been heavier than in the past two months. Price shows an unchanged range.

In no case, however, has the concession exceeded \$3 per ton under the levels of the American Sheet & Tin Plate Company, which are 3.00 cents, 3.85 cents, 5.00 cents and 5.35 cents, Pittsburgh, on blue annealed, black, galvanized, and full-finished automobile sheets, respectively. The latter interest has enough business on its books to run at its present rate until July 1 providing all specifications are received.

Already the majority of these orders are in the form of specifications. Sheet mill operations are averaging a trifle less, being between 70 and 75 per cent of capacity.

### **Tin Plate.**

Lots of 5000, 10,000, 12,000, 15,000, 17,000 and one of 20,000 base boxes of tin plate have been closed at Pittsburgh for export recently by large makers here. As usual these have been taken lower than the domestic price, but at a premium above the quotations prevailing on foreign tin plate. This is enabling the tin plate producers to round out their schedules for the remainder of the second quarter. Some pressure has been brought to bear to bring out the price announcement for the third quarter or last half.

Due to a falling pig tin market the possibility is that no increase will be inaugurated and the price of \$5.50 per base box.

Booking by steel producing interests in the Chicago district are falling slightly behind shipments. One interest is balancing shipments with new business but the other is finding its order book shortening somewhat. General operations for the district as a whole are slightly lower. The number of merchant and non-merchant blast furnace stacks in blast in this district is unchanged.

## ***Pig Iron Prices Weaken As Buying Is Still Deferred—Some Furnaces Going Out.***

***Chicago Price Reduction Due to Weak Market Tone  
—Birmingham Business Chiefly for Spot Shipment.***

**D**EVoid of inquiries and sales the pig iron market is stagnant. Each of several sellers reports one to five single carload sales in the past week, mostly foundry grades. All are hopeful a buying movement will start before the present month elapses. No. 2 iron is bringing \$22.50, and \$23, valley or Johnston.

No. 2 plain is available from brokers at \$21 and \$21.25, valley. The last sale of the No. 2 grade above a single carload involved 300 tons.

Warm blast southern charcoal iron now is quoted \$28 to \$30, furnace. An agent reports small sales here.

Resale basic iron is available at \$21. It is quoted at \$21.75 to \$22, valley, with no sales. Bessemer iron is selling in occasional carloads at \$23, valley.

Northern malleable and foundry iron prices are weak, with the quotation of \$24, furnace, quite general. Sales are made occasionally at \$24.50. Practically no inquiry is current.

Melters are using up their stocks and delaying buying. The melt of iron has not decreased decisively, nor are shipments down, although occasionally the holding up of contract iron is requested.

### ***Old Metals.***

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.50 to \$18.00; old iron axles, \$25.00 to \$25.50; steel springs, \$19.00 to \$19.50; No. 1 wrought iron, \$12.50 to \$13.00; No. 1 cast, 17.75 to \$18.25; all per net tons. Prices for non-ferrous metals are quoted as follows, per pounds: Light copper, 9 cents; light brass, 5½ cents; lead 5½ cents; zinc, 3¾ cents, and cast aluminum, 16½ cents.

The price reduction is due more to a general weak tone in the iron and steel markets than to competition, because little inquiry is out. A South Bend, Ind., melter purchased 500 tons of foundry iron. Birmingham iron still is available at \$22, Birmingham.

A Sheffield maker still is willing to meet competition with barge iron, but sales are light. A Michigan melter is inquiring for several hundred tons of silveries. Charcoal iron is holding to \$26, furnace, with sales limited to carlots.

Orders for 100 tons of pig iron are considered good at this time but are not numerous. Sales are far below production but there is a steady reduction of surplus stock due to active shipments. Furnace interests still owe consumers a considerable tonnage of iron. Most business being received now is for spot shipment. The melt in the home territory is brisk and this promises not only to continue but to show improvement.

Production is holding up to about the same level as it has been for several months. Quotations are being held at \$22.50 to \$23, No. 2 foundry, the lower price applying where there is some freight disadvantage.